BRITISH COLUMBIA
READING ASSESSMENT
1984

Summary Report

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THE 1984 B.C. READING ASSESSMENT

SUMMARY REPORT

by

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PREFACE

This report summarizes procedures and results of the 1984 B.C. Reading Assessment, and outlines conclusions and recommendations which derive from the results. Those interested in a detailed analysis of the assessment should consult the comprehensive General Report, available from the Learning Assessment Branch.

The 1984 Reading Assessment examined achievement and attitude characteristics of grades 4, 7, and 10 students. Results reported here are based on the responses of more than 98 000 students.

Many people contributed to the execution and interpretation of this assessment. We would like to express our appreciation to all those individuals whose names appear in this report as committee members or as contributors. As well, we would like to thank all the students who completed the surveys, and the teachers who administered them. Finally, we would like to acknowledge the contributions made by our support staff, particularly our secretary, Catherine Fenn, and our research assistant, Sherry Miyamoto.

SJ/CT/GL

THE 1984 READING ASSESSMENT

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HIGHLIGHTS

In May, 1984, over 98 000 British Columbia students participated in the third provincial assessment of reading. Students enrolled in grades 4, 7, and 10 responded to 40-item achievement surveys designed for their respective grade levels, to a background questionnaire, and to one of three attitude scales. As well, a 4% sample of students responded to open-ended items.

Three Interpretation Panels, one at each grade level, met in June to assist with interpretation of the achievement survey results. Through consensus, Panels rated student performance in each domain of interest as: Strong, Very Satisfactory, Satisfactory, Marginally Satisfactory, or Weak.

Regarding overall student achievement levels, the major findings of the assessment included:

- Grade 4 student performance was judged Very Satisfactory for each of the four domains assessed at that grade level: Understands Words and Expressions; Literal Comprehension; Inferential/Critical Comprehension; and Locates/Uses Information.
- Grade 7 student performance was judged to be Very Satisfactory for three domains: Understands Words and Expressions; Literal Comprehension; and Locates/Uses Information. Performance on the remaining two domains--Inferential Comprehension and Critical Comprehension--was rated Satisfactory.
- Grade 10 student performance was rated Very Satisfactory for three domains: Literal Comprehension; Inferential Comprehension; and Locates/Uses Information. Performance on two domains--Understands Words and Expressions and Critical Comprehension--was judged to be Satisfactory.

Extensive data related to student attitudes and leisure reading behaviour were examined. Results indicated that:

- Overall, students displayed relatively positive attitudes toward reading, reported high levels of enjoyment for reading fiction, and assigned high values to reading as a means of acquiring information and enhancing school achievement. A number of differences by gender and grade level were noted.

When data related to the open-ended questions were examined, they revealed that:

- Students at all grade levels displayed relatively high levels of literal comprehension and skill in organizing factual material.
- Most students were able to make appropriate inferences and judgements about the material they read, but at all grades, many students failed to substantiate their responses when required to do so.

Student achievement and attitudes varied according to a number of background characteristics. Strong relationships among achievement, attitude, home environment, and involvement in leisure reading were noted. Differences between boys and girls were striking:

- At all grade levels, girls attained higher achievement levels and displayed more positive attitudes toward reading than did boys.
- Differences between the performance of girls and boys on the achievement surveys was greatest at grade 7. For attitude, gender differences were greatest at grade 10.
- At all grade levels, boys displayed greater variety in the types of reading material which they reported reading and enjoying. They indicated a much stronger interest in nonfiction and periodicals than did girls, but reported less interest in fiction.

Overall, results of the 1984 Reading Assessment indicate a sound, basic reading program in B.C. schools. In order for the program to move toward excellence, some extensions are required along with strategies to deal with some specific areas of concern. The Contract Team presented a series of 26 recommendations directed to the Ministry, to postsecondary institutions, to local districts and schools, to classroom teachers, and to educational researchers. Special attention was directed to a number of areas including:

- An increased focus on inferential and critical reading skills;
- The need for extensive and diverse reading resources in all schools;
- The role of subject area teachers in fostering positive attitudes and increased reading among their students, particularly among boys in the intermediate and secondary grades;
- The importance of ensuring that teacher training in all subject areas include specific instruction dealing with student reading development and subject-specific reading skills;
- The continuing need for attention and resources for those students who must overcome language, socio-cultural, or other special problems in order to become competent readers; and
- The need for practical, easily available instructional and evaluation resources for teachers in all subject areas.

CHAPTER 1

PURPOSES AND ORGANIZATION

1.1 The B.C. Learning Assessment Program

In May, 1984, over 98 000 British Columbia students completed reading achievement and attitude surveys as part of the third provincial assessment of reading. The Provincial Learning Assessment Program, implemented in 1976, is based on the principle that the systematic collection and interpretation of comprehensive, objective information are essential components in the effective management of education at all levels. The major purposes of the assessment program are to:

1. Inform professionals and the public of some of the strengths and weaknesses of the public school system;
2. Assist the Ministry, school districts and schools in decisions related to the development, review, modification, revision, and implementation of existing curricula and supporting instructional resource materials;
3. Assist the Ministry in decisions concerning allocation of resources;
4. Identify areas of need, and provide directions for change in both pre-service and in-service teacher education and professional development;
5. Provide directions for educational research;
6. Monitor student learning over time; and
7. Provide the province, school districts, and schools with information which can be used to maintain strengths and overcome identified weaknesses.

With the 1984 Reading Assessment, the program enters the third cycle of assessment; reading was previously evaluated in 1976/77 and in 1980. Previous assessments have examined student performance in grades 4, 8, and 12, in order to permit generalizations about outcomes of primary, intermediate, and secondary schooling, respectively.

1.2 Context of the 1984 Reading Assessment

The 1984 Reading Assessment was undertaken within an educational context which differed in a number of important ways from that which prevailed during previous reading assessments. Changes, which have had important implications for the design and execution of the assessment, included:

1. The implementation of the grade 12 provincial examination program during the 1983-84 school year;

2. An increasing demand for objective achievement data at the school, as well as the district and provincial level;

3. Relatively stable curricula, resources and materials throughout the Language Arts and English programs: and

4. Fiscal limitations and constraints within the public school system reflecting a provincial economy under restraint.

The introduction of grade 12 examinations dictated that the general assessment of grade 12 students be reconsidered. First, the amount of instructional time devoted to provincial testing and assessment activities must be kept to a minimum; further, results of the grade 12 English examination can be used to a limited extent to examine provincial strengths and weaknesses. Consequently, the secondary assessment of reading was scheduled for grade 10--the end of the junior secondary grades--with a concomitant change from grade 8 to grade 7 as the designated intermediate grades outcome level. The primary grades assessment at grade 4 was retained; it was felt that grade 4, in fact, represents the end of primary schooling in many areas, as well as representing the earliest grade level at which many widescale assessment techniques are appropriate.

A 1983 survey of school district superintendents indicated strong support for the provincial assessment program. The most frequently identified limitation of the program--particularly by superintendents of large districts--was that it did not provide school-level results and thus failed to provide specific information which could be used to enhance programs and practices. The Ministry agreed; the 1984 Reading Assessment was thus the first assessment designed to produce school-level results. The decision had a number of implications for the design of the achievement surveys; these are discussed in the second chapter of this report.

Results of the 1976/77 language arts and reading assessment provided vital information for curriculum revision and materials selection. Between the first and second assessments of reading, new curriculum guides appeared for both elementary language arts and secondary English, along with resource books for English 8, 9, and 10. During the same time period, new reading series were authorized and prescribed for use in the elementary grades. Many schools introduced these programs during 1980. The 1980 Reading Assessment examined the impact of these publications through extensive teacher questionnaires, and sought to provide baseline data on student attitude and achievement in the early years of the new programs. Since 1980, curricula and instructional resources for reading have remained relatively stable. Most schools and districts have adhered to the programs implemented four or five years ago. In such cases, grade 4 students have been exposed to a single program or approach since entering school; grade 7 students, for at least the four intermediate grades. Further, in grades 1 through 10, no major changes are imminent. At the same time, the Ministry is placing less emphasis on implementation at the provincial level; it is seen, rather, as a local responsibility. Within the context described above, assessment efforts at the provincial level are most logically directed toward student achievement and attitude. Teacher and administrator questionnaires which have high utility in the context of revision and implementation are less important when no major decisions in these areas are contemplated.

The economic climate and fiscal restraint program in B.C. today demands that any expansion of educational services in one area be accompanied by the restriction of services in another. Consequently, with the addition of school-level reporting, the teacher and administrator questionnaires common to previous assessments were omitted from the 1984 reading assessment.

1.3 Objectives of the 1984 Reading Assessment

Within the general goals of the assessment program and the educational context described above, the 1984 assessment of reading was designed to examine the following issues:

1. To what extent are students in grades 4, 7, and 10 achieving the objectives for reading which are specified in current language arts and content area curriculum guides?
2. To what extent have these levels of achievement and attitude changed when compared to achievement reported in the 1980 Reading Assessment?
3. What recommendations to enhance student performance can be derived from these data and directed to:
   a. school administrators and teachers;
   b. pre-service and in-service educators;
   c. the Ministry of Education;
   d. school district administrators and resource personnel; and
   e. educational researchers?

1.4 Organization of the Assessment

The organizational structure of the 1984 Reading Assessment involved three major groups--the Learning Assessment Branch, a Contract Team and a Technical Agency--and followed procedures established for previous B.C. assessments.

1.4.1 The Learning Assessment Branch

The Learning Assessment Branch was responsible for and co-ordinated all activities and communication with Ministry, school district, and other educational organizations. As well, the Assessment Branch convened the following committees and panels:

1. The Advisory Committee which provided advice and review during development phases, and assisted with Interpretation and Review Panel meetings;

2. The Technical Subcommittee which assumed responsibility for decisions concerning technical and statistical issues;

3. Review Panels which subjected all potential achievement survey items to evaluative scrutiny; and

4. Interpretation Panels which determined acceptable and desirable standards of performance, and evaluated actual student performance in the light of these standards.

1.4.2 The Contract Team

The Contract Team, from Horizon Research and Evaluation Affiliates, included a research and evaluation consultant, a member of the Faculty of Education at the University of British Columbia (and, subsequently, the University of Calgary) a member of the College Foundations Division of Vancouver Community College, an elementary teacher from Chilliwack School District and a secondary teacher from Richmond School District. As well, eleven teacher associates from Abbottsford, Burns Lake, Coquitlam, North Vancouver, Richmond, and Smithers School Districts participated in item development and marking activities. The Contract Team identified candidate objectives from the provincial curriculum guides, developed tables of specifications based on the Advisory Committee's deliberations, designed all instruments used in the assessment, and prepared the Summary and General Reports.

1.4.3 The Technical Agency

The Educational Research Institute of B.C. (ERIBC) was responsible for production, distribution, and scoring of all pilot and final forms of the instruments, as well as for analysis of provincial, district, and school results. Members of the Technical Agency attended meetings of both the Technical Subcommittee and the Advisory Committee, prepared materials for the Review and Interpretation Panels, and provided technical, statistical, and psychometric consultation to the Ministry and the Contract Team.

CHAPTER 2

PROCEDURES

2.1 Nature of the Assessment

Reading is unique among instructional areas assessed in British Columbia. It is the most pervasive curricular area, and, consequently, the most difficult to delimit. No wide-scale assessment program can hope to examine all of the reading competencies which students develop and apply. The area to be assessed must be broad enough to permit generalizations about overall reading performance, but at the same time, be carefully circumscribed to provide schools, districts and the Ministry with valid, specific profiles of student attainment which can be used to enhance current instructional programs.

During initial meetings of the Contract Team and Technical Subcommittee four preliminary decisions were reached:

1. The assessment would focus on outcomes as opposed to enabling skills;
2. The assessment would not be restricted to the "Reading" strand of the Language Arts Curricula; rather, relevant objectives from all areas would be considered;
3. Stimulus materials would be drawn from passages/tasks which were as similar as possible to those currently in use in B.C. schools; and
4. Student responses would not be restricted to fixed-response or multiple-choice items; some questions would call for students to supply a response.

2.2 Development of the Achievement Surveys

The Achievement Surveys at each grade level were developed in a series of steps, beginning with selection of the outcomes to be assessed.

2.2.1 Domains and Objectives

The Contract Team, Technical Subcommittee, and Advisory Committee established the achievement domains and objectives or outcomes to be assessed. Reading and study skills objectives from the B.C. Language Arts, Social Studies, and Science Curriculum Guides were identified and assigned ratings of relative importance at each of grades 4, 7, and 10 by the Advisory Committee. The most highly rated objectives at each grade level were organized into broad categories or domains. Within each domain, objectives were assigned to one of three or four categories which were designated "objectives" for purposes of the assessment. A Table of Specifications for 120 items was prepared for each grade level with the number of items in each domain and for each assessment objective reflecting the ratings of the Advisory Committee. The Table of Specifications was subsequently revised to permit development of three parallel forms of the survey at each grade level. (A late decision to provide school-level reports required parallel construction in terms of domain and difficulty level; within domain, it was not feasible to maintain this parallelism at the objective-level.)

The Advisory Committee assigned highest ratings to objectives which dealt with understanding words, comprehending text, and applying research or study skills. At all grade levels, the largest group of these objectives dealt with text comprehension; in fact, the number and diversity of these objectives suggested that they be treated as two or three separate domains. Historical context and the organization of the B.C. Language Arts curricula argued for use of the traditional literal/inferential/critical categories. The five domains of interest for the 1984 assessment are described below:

1. Understanding words and expressions: recognizing high frequency words, obtaining meaning of low frequency or multiple-meaning words from context, and understanding figurative language;

2. Literal comprehension: understanding explicitly stated information; little analysis, translation or evaluation is required;

3. Inferential comprehension: inferring meaning through reorganization, translation, generalization, and recognition and interpretation of relationships;

4. Critical comprehension: evaluating both explicit and implicit material in such terms as purpose, source bias, validity, relevance, and technique; and

5. Study and research skills: using standard reference sources and book formats, locating and classifying information, and interpreting nonprose materials such as pictures, maps, graphs, and charts.

Table 2.1 shows the domains assessed and the number of associated items at each grade level. The Advisory Committee assigned highest priority to skills associated with literal understanding of words and connected discourse, with interpreting pictorial information, and with using standard reference formats for the grade 4 achievement surveys. The Committee suggested increased emphasis on inferential comprehension at grade 7, and on critical comprehension at grade 10.

The nature and difficulty of reading achievement items are determined as much by the reading passages as by the items. The Advisory Committee, in rating objectives to be assessed, also indicated relative importance of dealing with: literary materials, such as poetry, stories and personal essays; content area materials from science and social studies; reference materials, such as dictionaries, encyclopaedias, and card catalogues; and functional materials, such as students encounter outside of school.

Table 2.1
Domain Specifications for Achievement Surveys

Domain	Number of Items		
	Grade 4	Grade 7	Grade 10
1. Words and expressions	30	24	21
2. Literal comprehension	30	24	21
3. Inferential comprehension	21	27	24
4. Critical comprehension	6	15	30
5. Locates and uses information	33	30	24
Total	120	120	120

2.2.2 Achievement Items

Following development of test specifications and a pool of potential stimulus materials, achievement items for pilot testing were prepared under the direction of the Contract Team, reviewed by the Advisory Committee, the Technical Subcommittee, and provincial Review Panels, and revised as required. Some additional items were prepared to Review Panel specifications. During the second week in October, over 2500 students participated in pilot testing. Results formed the basis for item revision and final selection.

Finally, three 40-item achievement survey forms were designed for each grade. The forms were equivalent in terms of number of items per domain, estimated mean score per domain, and number and variety of stimulus passages.

Generalizability analyses indicated that reliabilities associated with domain level scores ranged from .70 to .92 for provincial interpretation.

2.2.3 Open-ended Achievement Forms

At each grade level, a fourth form of the achievement survey was constructed to assess open-ended responses to selected stimulus materials. This form was designed to permit assessment of objectives for which student construction of responses is essential. Such objectives include organization of material, substantiation of a response, and prediction of an outcome. Each open-ended form contained a few multiple-choice questions which replicated those on other forms, along with several open-ended questions calling for responses of varying length and complexity.

Student performance on the open-ended forms was reported only at the provincial level. Overall, a 4% sample of students--typically, one in each classroom--completed the open-ended form, yielding approximately 1400 responses at grade 4, 1500 at grade 7, and 1200 at grade 10.

2.3 Development of the Affective Scales

At each grade level, the Advisory Committee reserved highest priority for the objective, "Demonstrates a positive attitude toward reading." Affective item sets, replicated across grade levels, are described below:

1. Form R at all grades included the Estes Reading Attitude Scale which presents 15 statements about reading; students responded to each statement using a 5-point scale: strongly agree; agree; can't decide; disagree; strongly disagree;

2. Form S at all grade levels included a Value of Reading Scale which asked students to indicate the usefulness of reading for ten purposes, using a 5-point response scale anchored with: very useful; quite useful; can't decide; not very useful; not at all useful; and,

3. Form T at all grades included a Reading Enjoyment Attitude Scale where students responded to twelve listed types of reading materials using the options: like them very much; sometimes like them; can't decide; usually don't like them; never read them.

On the open-ended forms students were asked to provide responses to three questions:

1. What do you usually like to read?

2. What was the most recent book, magazine, or newspaper you read in your spare time?

3. List two ways that reading is important to you.

2.4 Student Background Characteristics

All participating students were asked to complete a series of questions related to biodemographic characteristics, reading and other leisure activities, school and classroom characteristics, and the extent of reading materials in their homes.

2.5 Administration, Scoring, and Analysis

The assessment surveys were administered between May 6 and May 11, 1984. Return rates, calculated using Fall 1983 enrollment data, exceeded 93% at grades 4 and 7, and were somewhat lower, at 77%, for grade 10.

The Technical Agency, Educational Research Institute of B.C. (ERIBC) completed all scoring and data analyses. Descriptive analyses for background, affective, and achievement survey items and scales involved the entire survey population. A second series of analyses used a 10% randomly drawn sample of student responses to each form at each grade to examine factorial structures of the affective instruments; associations among background variables; intercorrelations among domain scores; relative performance of subpopulations defined in terms of selected background characteristics; and relative contributions of biodemographic, socio-cultural, instructional placement, and leisure behaviour variables to affective and achievement outcomes.

Scoring and analyses of responses to the open-ended Q-form items were completed separately, using a random sample of more than 300 student responses at each grade level. Anchored rating scales, described in Chapter 5 of this report, were used to score student responses.

2.6 Interpretation and Reporting

Three Interpretation Panels, one at each grade level, were formed to assist in the interpretation of student achievement data. Panels were composed of elementary, secondary, and postsecondary teachers; school trustees; district staff; and parents. Members of the Advisory Committee served as chairpersons.

Interpretation procedures are outlined below:

1. Prior to the first meeting, panelists individually answered all test items appropriate to the grade they were to evaluate. They also established, in terms of the percent of students answering correctly, two levels of performance for each item--"acceptable" and "desirable." An "acceptable" level of performance represented satisfactory performance by some minimum percentage of students. A "desired" level of performance represented the percentage of students whom panelists wished would complete the item correctly; performance above this level indicated a provincial strength.

2. At the meeting, Interpretation Panels established "acceptable" and "desirable" levels of performance for each objective and domain through consensus.

3. Actual performance levels for each set of items were presented. Panelists compared these to the standards established in (2) above, and rated student performance on a 5-point scale: (1) Weak (2) Marginally Satisfactory (3) Satisfactory (4) Very Satisfactory (5) Strong.

A series of reports and related documents, prepared following the Interpretation Panels, include:

1. This Summary Report, prepared by the Contract Team, which summarizes results and procedures and details conclusions and recommendations;
2. A General Report, prepared by the Contract Team, which provides a detailed report of all aspects of the assessment;
3. Update, a brochure prepared by the Learning Assessment Branch, which outlines procedures and recommendations;
4. District Reports for each of the 75 B.C. school districts which describe results for the student population within the relevant district;
5. School Reports for each B.C. school which summarize results for the student population within the individual school;
6. A District Interpretation Guide which outlines procedures to be followed by individual districts in interpreting local results; and
7. A Technical Report, prepared by members of the Technical Agency, which describes all technical and systems aspects of the assessment.

The Summary and General Reports, and the Update are intended for general distribution; District and School Reports are provided to only the District Superintendent concerned. The Technical Report is an internal Ministry document. The District Interpretation Guide is intended for a specific audience; however, a limited number of copies are available for general distribution.

CHAPTER 3

ACHIEVEMENT SURVEY RESULTS

3.1 Overview

In this chapter, results of the multiple-choice achievement surveys are described for each of grades 4, 7, and 10 and are based on 33 258, 35 616, and 29 385 student responses, respectively. Within each grade, domain-level results are presented, along with Interpretation Panel standards and Panel judgements about student performance level. For each domain--and, in some cases, for each objective--the following summary information is given:

- Mean percent correct. For each item, the percent of students who selected the correct response was calculated. Omissions were considered to be errors. For an objective or domain, results are expressed as the average of these values. It is important to keep in mind that mean percent correct does not represent the performance level of individual students; rather, it reflects performance of the population.

- Standards. Panelists established "acceptable" and "desirable" performance levels--also expressed as mean percent of students--for each domain prior to viewing results.

- Judgements. After standards had been established and actual performance examined, Panelists rated performance using a 5-point scale: Strong, Very Satisfactory, Satisfactory, Marginally Satisfactory, and Weak. In arriving at these ratings, Panelists considered mean percent correct, the number of individual items where performance exceeded or fell below the "acceptable" and "desirable" standards, and, where available, comparative data from other assessments.

A final section of this chapter offers cross-grade comparisons, and examines changes in Interpretation Panel judgements over three B.C. reading assessments.

3.2 Achievement Survey Results: Grade 4

This section provides a brief summary of domain-level results. Teachers of elementary grades may find the detailed analysis and discussion in Chapter 3 of the General Report of greater instructional relevance than the abbreviated summary presented here.

3.2.1 Word meaning

At grade 4, 30 items were included in Domain 1, Understands Words and Expressions, and assigned to one of four objectives. For this domain, the Interpretation Panel established "acceptable" and "desirable" standards and made judgements about student performance for each of the four objectives before considering the domain as a whole.

For Objective 1.1, Recognizes Frequently Occurring Words, words were presented with minimal context. Such items place greatest emphasis on memory for the appropriate meaning of the target item as shown in item T2, below:

T2 *The child was in a state of panic. Panic means ...*

%		
4	A.	starvation
80	*B.	terror
4	C.	tiredness
3	D.	happiness
8	E.	I don't know.

For this and subsequent items, the correct response is indicated by an asterisk. The Panel judged this set of words to be relatively difficult for grade 4 students, and established "acceptable" performance as 66% and "desirable" as 82%. Student performance was rated Strong, 5 on a 5-point scale. The median percent correct of 80% was extremely close to the "desirable" standard of 82%; mean performance was slightly lower.

Objective 1.2, Derives Meaning from Context, was perceived as relatively difficult by the Interpretation Panel. Four of the items were administered in 1980; the remaining two items were used at grades 4, 7, and 10 in the current assessment to permit cross-grade comparisons. The Interpretation Panel rated performance on this objective as Satisfactory; median percent correct of 66% was slightly above the "acceptable" standard of 63%, while the mean, 59.7%, was somewhat lower, due to the extreme difficulty of one item.

Objective 1.3, Discriminates among Multiple Meanings, required students to select the appropriate meaning--within the context provided--for words with multiple definitions. Student performance exceeded the Panel's standard for "desirable" on six of nine items. The Interpretation Panel judged student performance on this objective to be Strong; the median item percent correct of 82% exceeded their "desirable" standard of 80%; again, the mean (77.2%) was slightly lower due to one extremely difficult item.

For Objective 1.4, Derives Meaning through Structural Analysis, words were presented in minimal context; students were required to derive meaning through knowledge of prefixes or suffixes, as shown in Item T10 below:

T10 Most people found Tim very likeable.
Tim ...

%		
27	A.	liked everyone.
10	B.	enjoyed being liked.
5	C.	tried to be liked.
55	*D.	was easy to like.
3	E.	I don't know.

Objective 1.4 was given low priority for assessment by the 1984 Advisory Committee; the set of six items was included at the Ministry's request, to permit comparison of 1984 results with those from 1980. For these items, students who failed to select a correct response tended either to choose "I don't know," or to create a response through association, as in T10 above, where the association between "most people" and "everyone" appealed to more than one-quarter of the students.

The Interpretation Panel rated student performance on this objective Marginally Satisfactory, with both median and mean percent correct falling slightly below the "acceptable" standard of 65%. Panelists were insistent, however, that this objective not be given priority in either instruction or future assessments, judging it to be the least important of the objectives assessed at grade 4. In this, they concurred with the Advisory Committee.

Results for the four Domain 1 objectives are summarized below:

Domain 1: Words and Expressions	Panel Standards		Student Performance	Panel Rating
	Acceptable	Desirable		
1.1 Word Recognition	66%	82%	77.6%	STRONG
1.2 Context Clues	63%	74%	59.7%	SATISFACTORY
1.3 Multiple Meanings	65%	80%	77.2%	STRONG
1.4 Structural Analysis	65%	78%	63.2%	MARGINALLY SATISFACTORY

Eleven items from Domain 1 appeared previously on the 1980 Reading Assessment. On average, a change of 2 or 3% favoured the 1984 population; results are relatively stable over the four-year period. Interpretation Panel standards are stable as well: similar performance levels received similar ratings in both 1980 and 1984. When the 1984 Interpretation Panel examined overall results, peformance on Domain 1 was rated Very Satisfactory. Panelists concluded that most grade 4 students have developed the word recognition and analysis skills demanded by current B.C. curricula and instructional materials.

3.2.2 Literal Comprehension

Domains 2 and 3 at grade 4 addressed passage comprehension. Stimulus passages included literary narratives, poetry, and informative passages. Four passages appeared on each form. A poem appeared on all three forms of the test; it is reproduced here as Figure 3.1.

"The Mouse"

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor --

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

The bread box is tin
And I cannot get in.

The Jam's in a jar
My teeth cannot mar.

The cheese sits by itself
On the ice-box shelf.

All night I run
Searching and seeking;
All night I run
About the floor.

Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

Elizabeth Coatsworth

Figure 3.1 Poem from Grade 4 Surveys

Domain 2, Literal Comprehension, included 30 items--10 on each form. The Advisory Committee for the 1984 Reading Assessment suggested that this domain of material receive highest priority at grade 4. Items within this domain required students to indicate understanding of central ideas, of sequence, of relationships, and of supporting detail, when such material is explicitly stated in text.

The Panel considered items within this domain as a single set, rather than as representing discrete objectives; thus, domain-level acceptable and desirable standards were established, rather than a series of standards for each objective.

A section of one stimulus passage is shown in Figure 3.2, along with items S25, S26, and S27. All three items deal with material which is explicitly presented in the passage. Items S25 and S26, however, pose a more difficult task for students; in both cases, a large proportion of students chose a response which was given in the passage, but which was not relevant to the question. Item S27 was apparently much easier to deal with, as only one of the responses could be located in text. Student performance on literal comprehension was consistently lower whenever students were required to discriminate between response options which could be located in the text.

For this domain, student performance exceeded the Panel's standard for "desirable" on 11 of the 30 items; a further 15 items fell between "acceptable" and "desirable." Interpretation Panelists judged overall student performance on the literal comprehension items to be Very Satisfactory, with the mean percent correct of 75.2% comparing favourably with the "acceptable" standard of 65%. Panelists concluded that B.C. grade 4 students are clearly able to deal with literal interpretation of the stimulus materials presented in this survey. Results for Domain 2 are summarized below:

Domain 2	Panel Standards Acceptable	 Desirable	Student Performance	Panel Rating
Literal Comprehension	65%	79%	75.2%	VERY SATISFACTORY

3.2.3 Inferential and Critical Comprehension

At grade 4, 27 items which addressed inferential and critical comprehension were assigned to Domain 3. These items were designed to invoke processes such as synthesis, translation, analysis, and evaluation, and dealt with inferring central ideas, making predictions and generalizations, drawing conclusions, inferring relationships, and evaluating information.

One of the more difficult items from Domain 3 is presented below:

R12 How do we know that Jim Parker, the patrolman, jumped to conclusions?

%		
60	*A.	He accused Ted of breaking the window before he knew all of the facts.
4	B.	He liked Mike.
7	C.	He didn't trust young boys.
12	D.	He was a patrolman and Captain Lake was his commanding officer.
16	E.	I don't know.

DEEP RIVER ELEMENTARY SCHOOL

On Thursday, June 3, our school will take part in the District Track and Field Meet at the Sixth Avenue Ball Park in Port Edwards. Transportation is free of charge. If you are interested in having your child take part please sign and return this form to the school by Wednesday, May 26.

You are reminded that lunch is served by our Home-School Committee. The menu includes hot dogs, salad, milk, and fresh fruit at a charge of $2.50 per person. If you wish to buy lunch for your child, please send the $2.50 in a sealed envelope to the school no later than Friday, May 28.

S25 What should students do with the form after it has been signed by a parent or guardian?

%		
3	A.	Bring it to the Track Meet.
64	*B.	Return it to the school by Wednesday, May 26.
26	C.	Return it in a sealed envelope by May 28.
3	D.	Give it to the Home-School president.
2	E.	I don't know.

S26 What is the cost of transportation?

%		
36	A.	$2.50.
1	B.	$4.00.
2	C.	$5.00 for the whole family.
56	*D.	There is no charge.
2	E.	I don't know.

S27 According to the announcement, what is on the menu?

%		
87	*A.	salad, milk, fruit and hot dogs.
4	B.	hot dogs, salad, chocolate milk.
2	C.	fruit, hot dogs, and chips.
2	D.	salad, ice cream and hot dogs.
3	E.	I don't know.

Figure 3.2. Informative Passage and Associated Items from the Grade 4 Surveys

For this item, a relatively large proportion of students selected "I don't know," in effect, declining to attempt the task. Of those who selected an incorrect response, the largest group chose D, an option which is consistent with the information presented in the story, but not relevant to the question.

On the other hand, students performed well on items where they were required to infer causal relationships or to predict subsequent events in narrative passages, and on items which required them to infer the purpose of informative passages.

Student performance exceeded the Panel's "desirable" standard of 76% for 11 of the 27 items assigned to this domain; 9 items fell between "acceptable" and "desirable." Overall, the Panel judged performance in this domain to be Very Satisfactory, with mean performance of 70.9% exceeding the Panel's "acceptable" standard of 63%. Panelists noted student competence in dealing with literary materials; overall, they felt that items which fell below the "acceptable" level required relatively sophisticated strategies which many grade 4 students have yet to attain. Results are summarized below:

Domain 3	Panel Standards Acceptable	Panel Standards Desirable	Student Performance	Panel Rating
Inferential Comprehension	63%	76%	70.9%	VERY SATISFACTORY

3.2.4 Locates and Uses Information

At grade 4, 33 items were assigned to three objectives within Domain 4, Locates and Uses Information. Collectively, these items deal with locating and using information which appears in formats other than connected discourse. The items are designed to elicit skills such as classifying and sequencing; in many cases, students must recognize subordinate and superordinate relationships. Two of the objectives within this domain deal with print sources; the distinction between these objectives is somewhat arbitrary. The third deals specifically with pictorial material.

For Objective 4.1, Locates Information Using Standard Formats, 12 items required students to interpret information provided in a newspaper index, a table of contents, and a library card. Items associated with the table of contents were somewhat more likely to cause difficulty for students than were other items. A table of contents was provided, followed by questions designed to elicit information regarding such social studies units as living in the desert, in plains, in mountainous areas, and so on. Item S33 is shown below:

S33 On which page would you begin to find out about living in the deserts of Asia?

%		
12	A.	page 45
4	B.	page 53
73	*C.	page 61
3	D.	page 67
3	E.	I don't know.
5	omitted.	

For item S33, the most attractive distractor, A, gives the first page number for the unit on deserts, but that chapter is associated with North American deserts.

The Interpretation Panel judged student performance on this objective to be Very Satisfactory; mean performance of 72.1% compared favourably with the "acceptable" standard of 65%.

For Objective 4.2, Uses Information Provided in Standard Formats, 9 items required students to answer questions about a glossary, a menu, and a "spending diary." Performance on seven of nine items exceeded the "desirable" standard of 85%. Clearly, students experienced little difficulty with the formats provided. They found the "Spending Diary" (a simulated one-week record of a child's expenditures) particularly easy; as well, items associated with a Drive-In Menu and with a glossary provided little difficulty. Overall, the Interpretation Panel found student performance on this set of items encouraging, with mean performance virtually coincidental with the "desirable" standard of 85%; the Panel assigned a rating of Strong (5 on a 5-point scale) to performance on Objective 4.2.

Objective 4.3, Interprets Pictorial Material, involved stimulus material drawn from the content area of social studies, where ability to derive information from pictures is central to many learning activities in the elementary grades. The 1984 Advisory Committee assigned a very high priority to this objective. It should be noted that the picture and its associated items appeared at the end of each achievement survey; consequently, student results are likely to be slightly deflated as between 6 and 8% of students were unable to complete the survey within the time allotted. For the most part, students who attempted the items had little difficulty in selecting the correct answer. The Panel assigned a rating of Very Satisfactory (4 on a 5-point scale) to this objective. Mean student performance of 79.8% compared favourably with the Panel's "acceptable" standard of 69%, and approached the "desirable" standard of 82%.

Panel standards and student performance on the Domain 4 objectives are summarized below:

Domain 4: Locates & Uses Information	Panel Standards		Student Performance	Panel Rating
	Acceptable	Desirable		
4.1 Locates Information	65%	78%	72.1%	VERY SATISFACTORY
4.2 Uses Standard Formats	72%	85%	84.8%	STRONG
4.3 Interprets Pictures	69%	82%	79.8%	VERY SATISFACTORY

The Interpretation Panel assigned an overall rating of Very Satisfactory to Domain 4, Locates and Uses Information. Panelists felt that grade 4 students had demonstrated a relatively high level of competence in dealing with functional and reference formats, and with pictorial stimuli.

3.2.5 Summary: Grade 4 Achievement Survey

The Interpretation Panel judged overall grade 4 results to be Very Satisfactory--indicative of a primary reading program with many basic strengths. Given these results, Panelists suggested that the program--and concomitantly, student achievement--could move toward excellence through an emphasis on higher levels of comprehension, through increased diversity in support materials for the Language Arts program, and through increased integration of reading with other language arts and content areas.

3.3 Achievement Survey Results: Grade 7

The ensuing section provides a brief summary of domain-level results for the achievement survey contained on forms R, S, and T. A more detailed discussion of grade 7 student performance may be found in Chapter 3 of the General Report; teachers of intermediate grades may find the detailed analysis of greater instructional relevance than the abbreviated presentation offered here.

3.3.1 Word Meaning

For Domain 1, Understands Words and Expressions, Interpretation Panelists established standards and judged performance for each of the three objectives, before considering domain-level performance.

Items associated with Objective 1.1, Recognizes Frequently Occurring Words, presented target words in a sentence offering minimal context. Seven of the nine items equalled or exceeded the Panel's standard for acceptable performance, 69% correct responses. The distribution of p-values is negatively skewed, resulting in a mean of 70.2%, slightly lower than the median of 73%. Three items from the 1980 grade 8 achievement surveys were included here. For these items, 1984 grade 7 performance exceeded 1980 grade 8 performance by an average of more than 4%. The Interpretation Panel judged performance on Objective 1.1 as Very Satisfactory in the light of their standards and comparison data from 1980.

For Objective 1.2, Derives Meaning from Context, students were required to derive the meaning of low frequency words from context, as shown below:

S6 We were surprised to see them. We did not know they were in France; our meeting was fortuitous.
The word fortuitous most likely means ....

%		
2	A.	in a group of four.
5	B.	in far places.
78	*C.	accidental.
8	D.	well-planned.
6	E.	I don't know.

For this objective, student performance exceeded panel expectations. Seven of nine items were well above the "acceptable" standard of 63.5%. Again, a negatively skewed distribution produced a mean of 72.8%, somewhat below the median p-value of 77%. Two items were extremely difficult: one of these was of debatable quality; the other served as a comparison item with grade 10. The Interpretation Panel performance on Objective 1.2 as Strong; grade 7 students, they felt, had demonstrated a relatively high degree of proficiency in determining word meaning from context.

All six items associated with Objective 1.3, Discriminates among Multiple Meanings, appeared on the 1980 grade 8 surveys. These items offered dictionary entries as response alternatives as shown in item S4, below:

S4 Turning on a light can have numerous effects; one is giving off light.
Here effects means ....

%		
11	A.	the quality of being operative.
64	*B.	visible results.
5	C.	basic meanings.
16	D.	distinctive impressions.
3	E.	I don't know.

Three items exceeded the panel's standard for acceptable performance; the mean p-value of 67.3% and the median, 67% were very close to the Panel's standard of 66%. When the performance of the 1984 grade 7 students is compared with that of the 1980 grade 8 population, the average gain is between 1 and 5%.

Results for Domain 1 objectives are summarized below:

Domain 1: Words and Expressions	Panel Standards		Student Performance	Panel Rating
	Acceptable	Desirable		
1.1 Word Recognition	69%	82%	70.2%	VERY SATISFACTORY
1.2 Context Clues	63.5%	80%	72.8%	STRONG
1.3 Multiple Meanings	66%	79%	67.3%	SATISFACTORY

When the three objectives were considered together, the Panel rated overall performance on Domain 1 as Very Satisfactory.

3.3.2 Literal Comprehension

At grade 7, Domains 2, 3, and 4 involved literal, inferential, and critical comprehension, respectively. The stimulus passages for the comprehension objective included literary narrative passages, poetry, information material from Science and Social Studies, and a personal essay. One of the narrative passages is given as Figure 3.3.

Domain 2, Literal Comprehension, required students to indicate understanding of main ideas, of sequence, of relationships, and of supporting information when these are explicitly stated in text.

Seven items were below the panel's "acceptable" standard; with one exception, these required identification of relevant information or of sequence of events.

The Interpretation Panel noted concern with performance on the two items which required recognition of sequence. Item R35, associated with "The Dinner Party" (see Figure 3.3) is given below:

R35 Which one of the following events happened first in the story?

%		
25	A.	The boy's eyes widened.
14	B.	The native boy placed a bowl of milk on the veranda.
6	C.	The American counted to three hundred.
51	*D.	The snake crawled across Mrs. Wynne's foot.
3	E.	I don't know.

Results for Item R35 and for a similar item associated with a passage about events in Chief Dan George's life, suggest that many students equate the placement of information with actual time sequence. In the case of item R35, 25% of students chose A, information which was presented first. It is perhaps even more discouraging to note that 14% chose option B, which neither occurred first, nor was presented first.

It seems clear, in retrospect, that both these items required inferential rather than literal comprehension; this does not, however, make them less of a concern. The ability to follow the sequence of a narrative is central to understanding both literary and informative material. It is not possible to discern from the results whether students misunderstand the requirements of the items, or whether they have failed to grasp the sequence of events presented in the passages. That is, if students were asked to re-tell or summarize the passages, would they present an accurate sequence of events? Difficulties with sequence were unanticipated at this grade level; in view of the apparent difficulty of such tasks, the Interpretation Panel strongly suggested that sufficient sequencing tasks be included in future assessment surveys to examine the nature and extent of student problems.

Student performance exceeded the panel standard for "desirable" on 8 of the 24 items. Three of these items dealt with key or central ideas in the three poems presented; four, with recognition of relationships in informative material. Nine items fell between the "acceptable" and "desirable" standards; five of these required recognition of causal relationships across a variety of stimulus material. Overall, the Panel judged performance on literal comprehension to be Very Satisfactory, with student mean performance exceeding the "acceptable" standard by more than 6%. Results are summarized below:

Domain 2	Panel Standards Acceptable	 Desirable	Student Performance	Panel Rating
Literal Comprehension	72%	85%	78.4%	VERY SATISFACTORY

The Dinner Party

The country is India. A colonial offical and his wife are giving a large dinner party. They are seated with their guests--army officers and government attaches and their wives, and a visiting American naturalist--in their spacious dining room, which has a bare marble floor, open rafters, and wide glass doors opening onto a veranda.

A spirited discussion springs up between a young girl who insists that women have outgrown the jumping-on-a-chair-at-the-sight-of-a-mouse era and a colonel who says that they haven't.

"A woman's unfailing reaction to any crisis," the colonel says, "is to scream. And while a man may feel like it, he has that ounce more of nerve control than a woman has. And that last ounce is what counts."

The American does not join in the argument but watches the other guests. As he looks, he sees a strange expression come over the face of the hostess. She is staring straight ahead, her muscles contracting slightly. With a slight gesture she summons the native boy standing behind her chair and whispers to him. The boy's eyes widen, and he quickly leaves the room.

Of the guests, none except the American notices this or sees the boy place a bowl of milk on the veranda just outside the open doors.

The American comes to with a start. In India, milk in a bowl means only one thing--bait for a snake. He realizes there must be a cobra in the room. He looks up at the rafters--the likeliest place--but they are bare. Three corners of the room are empty and in the fourth the servants are waiting to serve the next course. There is only one place left--under the table.

His first impulse is to jump back and warn the others, but he knows the commotion would frighten the cobra into striking. He speaks quickly, the tone of his voice so arresting that it sobers everyone.

"I want to know just what control everyone at this table has. I will count three hundred--that's five minutes--and not one of you is to move a muscle. Those who move will forfeit fifty rupees. Ready!"

The twenty people sit like stone images while he counts. He is saying "... two hundred and eight ..." when, out of the corner of his eye, he sees the cobra emerge and make for the bowl of milk. Screams ring out as he jumps to slam the veranda doors safely shut.

"You are right, Colonel!" the host exclaims. "A man has just shown us an example of perfect control."

"Just a minute," the American says, turning to his hostess. "Mrs. Wynnes, how did you know that cobra was in the room?"

A faint smile lights up the woman's face as she replies: "Because it was crawling across my foot."

Figure 3.3 Literary Narrative Passage from Grade 7 Surveys

3.3.3 Inferential Comprehension

Twenty-seven items were assigned to Domain 3, Inferential Comprehension, at grade 7. These items required students to infer central ideas, make predictions and generalizations, draw conclusions, and infer relationships. The Interpretation Panel considered the items as a single unit and established overall acceptable and desirable standards for the domain. Two items, R38 and R39, associated with "The Dinner Party" (see Figure 3.3) are given below:

R38 Why did a faint smile light up Mrs. Wynnes' face as she replied, "Because it was crawling across my foot."?

%		
9	A.	She had just won fifty rupees from every guest in the room.
12	B.	The cobra had tickled her feet.
68	*C.	She proved that the Colonel was wrong about women.
4	D.	The snake had scared away all the mice.
4	E.	I don't know.

R39 Why did the American slam the veranda door?

%		
77	*A.	to keep the cobra out.
4	B.	to keep the insects out.
7	C.	to keep people from leaving.
5	D.	to keep the servants from hearing the conversation.
3	E.	I don't know.

It is interesting to note the difference in student performance on these two items. Both require students to infer motivation; it seems clear that students who cannot make these two inferences have an imperfect understanding of the story. The second item, however, refers to action and is somewhat more direct. Students performed relatively well on this item, particularly when its placement near the end of the survey is considered. Item R38 requires a more subtle understanding; students found it more difficult, with the 12% who chose option B preferring a literal response, rather than drawing a conclusion.

For this domain, student performance equalled or exceeded the panel standard for "desirable" on eight items; seven of these required students to infer a central idea, or a causal relationship. Eleven items fell between "acceptable" and "desirable"; for eight items student performance was below the panel acceptable level. Three of these were associated with literary narrative passages; three with a persuasive passage. Overall, the Panel judged performance on inferential comprehension Satisfactory, concluding that, generally, grade 7 students are able to make appropriate inferences from material presented. Results for Domain 3 are summarized below:

Domain 3	Panel Standards Acceptable	 Desirable	Student Performance	Panel Rating
Inferential Comprehension	69%	82%	72.8%	SATISFACTORY

3.3.4 Critical Comprehension

At grade 7, 15 items were assigned to Domain 4, Critical Comprehension. These items required students to recognize the author's purpose, to evaluate conclusions, and to distinguish between fact and opinion, or between relevant and irrelevant information. Items were associated with literary, informative, and persuasive passages.

Within this domain, many panel members were concerned about student performance on items which required that students distinguish between fact and opinion--items S13 (76% correct); S17 (70% correct); R40 (55% correct); and T38 (52% correct). Two of these items are reproduced below:

S17 Which one of the following statements is an opinion about child labour?

%		
10	A.	Children worked in hot, sweaty places.
8	B.	Children were often beaten.
9	C.	Children worked six days a week.
70	*D.	Child labour should be against the law.
3	E.	I don't know.

R40 Which one of the following is clearly a statement of opinion? (see Figure 3.3)

%		
14	A.	A bowl of milk attracts a cobra.
55	*B.	A man has more "nerve-control" than a woman.
15	C.	Sudden movement and noise may frighten a cobra into striking.
10	D.	The likeliest place to find a cobra is in the rafters.
3	E.	I don't know.

Although each of the items above is associated with a passage, neither is passage-dependent; that is, the correct answer can be selected without reference to the passage. Results for these items suggest that many grade 7 students are unable to distinguish between statements of fact and statements of opinion; they apparently have not learned to attend to cues such as "too," "great," "very," and "should," in discriminating between fact and opinion. Several panelists suggested strongly that future assessments systemically include fact/opinion questions at this grade level.

Three other questions which caused some difficulty for students were associated with the persuasive passage, "Children's Sports," which deals primarily with the dangers of competitive sports. Of perhaps most concern were responses to item T30 shown below:

T30 Which one of the following statements best describes the information presented in this article?

%		
2	A.	It is mostly about boys' rather than girls' sports.
10	B.	It is mostly about the good effects of children's sports.
25	C.	It presents good and bad features of children's sports.
58	*D.	It is mostly about problems with children's sports.
3	E.	I don't know.

It is sobering to note that 10% of the students were able to ignore virtually all of the information presented, and that a further 25% perceived a "balanced" presentation where such clearly did not exist.

Within this domain, students performed relatively well on questions which related to the purpose of informative passages, and to the distinction between relevant and irrelevant material. Performance on one item exceeded the "desirable" standard of 84%, eight items fell between "acceptable" and "desirable," while six items were below the "acceptable" standard. Overall, the panel rated performance as Satisfactory, with mean student performance virtually coincidental with the Panel "acceptable" standard. Results for Domain 4 are summarized below:

	Panel Standards			
Domain 4	Acceptable	Desirable	Student Performance	Panel Rating
Critical Comprehension	69.5%	84%	70.4%	SATISFACTORY

3.3.5 Locates and Uses Information

At grade 7, 30 items were associated with the three objectives assigned to Domain 5, Locates and Uses Information.

Nine items were assigned to Objective 5.1, Locates and Organizes Print Information. These items required students to assign information to outline headings or to identify probable location of material using a table of contents. Students displayed a high level of competence on these items. Three items exceeded the "desirable" standard (84%), and only one item fell below "acceptable" (70%). The Panel judged student performance as Strong, and concluded that, given the stimulus material presented, grade 7 students displayed a high level of competence in locating and organizing material.

Nine items were assigned to Objective 5.2, Uses Standard References: Dictionary. Six items required students to select from alternate definitions; three involved the use of guide words and were repeated from the 1980 reading assessment. One item exceeded the "desirable" standard (84.5%), six fell between "acceptable" (72%) and "desirable;" performance on two items fell below the "acceptable" standard. Student performance was judged to be Satisfactory.

When 1984 grade 7 performance is compared with 1980 grade 8 performance on the three comparison items for this objective, results are virtually identical: each item shows a gain of 1% for 1984 grade 7 students.

Twelve items were assigned to Objective 5.3, Interprets Maps, with a street map of downtown Edmonton and a road map for a small town as stimulus material. Performance on five items exceeded the "desirable" standard, three items fell between "acceptable" and "desirable," and three items--one of which was repeated on two forms--fell below the "acceptable" standard. Students had less difficulty interpreting the street map of Edmonton; the road map for a small town posed more difficulty and was criticized by the Panel as being ambiguous and idiosyncratic, rather than adhering to a standard format. Student performance for this objective was judged Very Satisfactory; student mean performance compared favourably with the Panel's "acceptable" standard.

Results for the three Domain 5 objectives are summarized below:

Domain 5: Locates & Uses Information	Panel Standards		Student Performance	Panel Rating
	Acceptable	Desirable		
5.1 Locates and Organizes	72.5%	87.5%	83.1%	STRONG
5.2 Dictionaries	70%	84%	73.8%	SATISFACTORY
5.3 Interprets Maps	72%	84.5%	76.3%	VERY SATISFACTORY

When overall Domain 5 results were examined, the Panel rated student performance as Very Satisfactory. Panelists differed considerably, however, in their estimation of the importance of this domain of material: some felt that the Domain 5 items did not reflect important dimensions of reading competence and were thus inappropriate for an assessment survey; others judged these items and the associated skills to be critical for students about to enter high school. Given this dichotomy among the educators, parents and school board members on the grade 7 panel, it is not surprising that students reach the secondary grades with varying degrees of competence in research and study skills.

3.3.6 Summary: Grade 7 Achievement Survey

The Interpretation Panel judged grade 7 student performance to be Very Satisfactory on three of the five domains assessed: Understands Words, Literal Comprehension, and Locates and Uses Information. Performance on items associated with higher level comprehension skills--inferential and critical comprehension--was considered Satisfactory. Results indicate a relatively successful basic reading program. It seems clear that attempts to move toward excellence will need to focus on higher level comprehension skills. As the grade 4 Panel noted, such an emphasis may well require integration across subject areas and a diversity of support material.

3.4 Achievement Survey Results: Grade 10

This section provides a brief summary of the achievement survey results for grade 10. Those wishing a more detailed analysis of student performance are directed to Chapter 3 of the General Report.

3.4.1 Understands Words and Expressions

At grade 10, 21 items were included in Domain 1, Understands Words and Expressions and assigned to one of three objectives.

Stimulus words for Objective 1.1, Derives Meaning from Context, were selected on the basis of their unfamiliarity to most grade 10 students and presented within the context of one to four sentences. It is interesting to note that students performed best when the words were presented in one or two sentences; performance was weaker when words were presented in slightly longer passages.

Student performance exceeded the Panel's "desirable" standard on four of the nine items. The Interpretation Panel assigned a rating of Very Satisfactory (4 on a 5-point scale) to student performance; the mean compared favourably with the Panel's "acceptable" standard. Item S5, assigned to this objective, is shown below:

S5 For tomorrow, we've planned a picnic. It would be great to have good weather for a change, but I'm not sanguine--it's rained all month.

The word sanguine most likely means...

%		
5	A.	happy.
72	*B.	hopeful.
5	C.	prepared.
14	D.	discouraged.
4	E.	I don't know.

For Objective 1.2, Discriminates among Multiple Meanings, words were presented in sentences which provided context clues; dictionary definitions of the word were offered as response options. For this grade level, then, items associated with this objective simulated the task students face in discriminating among alternate dictionary definitions. One such item is given below:

S1 His application to his work made him an excellent student.

Here application means ...

%		
68	*A.	close attention.
13	B.	a request, as for a job.
13	C.	anything that is applied (put on or upon).
5	D.	the act of putting on or upon.
1	E.	I don't know.

For item S1, it appears that many students chose a response by association rather than by deduction; thus, for option B, associating "job" with "work" which appears in the item, and, for option C, associating "applied" with the stimulus word "application."

The Interpretation Panel rated student performance on the items associated with multiple meanings as Marginally Satisfactory (2 on a 5-point scale). Mean student performance of 61.3% was slightly below the Panel's "acceptable" standard of 64%.

For Objective 1.3, Interprets Figurative Language, as expected, students found the interpretation of metaphors somewhat more difficult than that of similes. Item S18 is shown below:

S18 "His future, like a book
With half the pages still uncut."

These lines mean that ...

%		
80	*A.	no one will ever know what his future might have held.
3	B.	her brother will be remembered through her book of poetry.
13	C.	her brother didn't realize that his life would end so early.
1	D.	there are many books her brother will never read.
2	E.	I don't know.

Most students had little difficulty interpreting the simile given in item S18; most of those who selected an incorrect option chose C recognizing that the quotation dealt with an early death; only 4% of students chose B or D, apparently failing to recognize the quotation as a figure of speech.

Mean percent correct for the six items associated with figurative language was 61.8. The Panel judged this to be Satisfactory (3 on a 5-point scale) as it was virtually coincidental with the "acceptable" standard of 62%.

Results for the three Domain 1 objectives are summarized below:

Domain 1: Words and Expressions	Panel Standards		Student Performance	Panel Rating
	Acceptable	Desirable		
1.1 Context Clues	64%	78%	69.6%	VERY SATISFACTORY
1.2 Multiple Meanings	64%	78%	61.3%	MARGINALLY SATISFACTORY
1.3 Figurative Language	62%	76%	61.8%	SATISFACTORY

The grade 10 Interpretation Panel judged overall performance on Domain 1 to be Satisfactory--the mid-point on a 5-point rating scale.

3.4.2 Literal Comprehension

At grade 10, Domains 2, 3, and 4 involved literal, inferential, and critical comprehension, respectively. Stimulus passages included poetry, personal essays, informative materials and literary narrative passages. One of these passages, "Wild Horses" by Paul St. Pierre, appears as Figure 3.4.

Domain 2, Literal Comprehension included 21 items--7 assigned to each of forms R, S, and T. Not surprisingly, over half of the items in this domain were associated with informative content area materials where literal understanding is often most difficult.

While each item was assigned to one of three objectives--understands central ideas, recognizes relationships, or understands supporting information--the Interpretation Panel viewed items within this domain as a single set and established overall standards for "acceptable" and "desirable" levels of performance. Variations in item results do not appear to be attributable to differences among objectives. There is, however, some tendency for students to perform better on items associated with informative stimulus material than on those associated with personal essays: three of five items which less than 70% of students answered correctly are associated with personal essays, while seven of the eight items which more than 75% of students answered correctly were dependent on informative material. Students found one item, R36 extremely difficult:

R36 How did Barry think he could provide his daughter with a feeling of security?

%		
28	A.	by being a companion to her
11	B.	by providing her with everything she needed
47	*C.	by keeping life simple
4	D.	by opting out of society
4	E.	I don't know.
6	omitted	

The keyed response can be found in two contiguous sentences within the narrative stimulus passage:

> "He did his best to keep life simple and uncomplicated. It was, he thought, the way to provide security."

Why, then, did fewer than half of the students answer correctly? First, 10% of students either failed to respond or selected "I don't know." A further 15% chose options B or D, neither of which is supported by the passage. These students either did not read the passage--a relatively long excerpt which occurred at the end of the test--or completely failed to recognize the father's explicitly stated motivation. Most students who responded incorrectly chose option A, apparently responding according to their overall perception of the

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Wild Horses

The fickle eye of public interest has, in recent years, focused briefly on the Cariboo wild horses. Wild horses have attracted the attention of ranchers for generations, but the interest of the general public in such matters is always briefer -- although it may be, for a short time, far more intense.

The majority view of the ranchers seems clear. They want wild horses tamed, trapped and sold, or shot, according to merit. They say that they are runts which kidnap mares from domestic herds and take them away into the mountains. They say that wild horses breed down the domestic stock. They say that the life of a wild horse is nasty, brutish, and short -- and the shorter the better.

Those who love the wild horse bands say there is something splendid about anything wild and free. Should we wipe out the last of the wild horse bands, they say, we will regret it, even as we would regret the extinction of moose, deer, or any other wild creature.

Having had the good fortune to watch a wild band stampeding across a lonely mountain meadow with their broomtails streaming in the wind of their passage, I have been able to develop a sympathy for both points of view.

Wild horse herds develop during cycles of moderate weather. Those who are opposed to the protecting of wild horses say that it is an exercise in cruelty; that in the B.C. mountains all such bands face a cruelly slow death by starvation when one of our severe winters locks up their feed areas in the remote mountain valleys.

Over the years, the wild horse herds have been thinned by men as well as by winters. Some herds were driven into crudely-built corrals with long wings; once trapped there, animals of good conformation might have been chosen for domestication. Others were sold to be butchered for fox feed. In other circumstances, cowboys were sent out to shoot wild horses; bounties were sometimes paid.

As the fences advance and our wilderness shrinks, we may encounter a day when they will no longer exist. Whether this will be a better and kinder thing is still open to debate.

Figure 3.4 Personal Essay Passage from Grade 10 Surveys

relationship between the characters--who were "companions" in that they were mountain climbing together--rather than examining the text for relevant evidence. The time constraints of the testing situation may well have encouraged this type of error. However, while this item represents the most extreme example, it is not an isolated case. Analyses of incorrect responses to several items suggests that many students who fail to answer the literal comprehension items correctly are not necessarily unable to recognize or comprehend relevant sections of text; rather, they have failed to consult the text after a first reading, often maintaining--as in the item discussed above --a flawed perception of the material.

Overall, students displayed little difficulty with the items in Domain 2. Student performance fell between "acceptable" and "desirable" standards for over half the items. The Interpretation Panel judged performance to be Very Satisfactory (4 on a 5-point scale), noting that the mean percent correct of 72.7 compared favourably with the "acceptable" standard of 71% and that percent correct fell below 70 for only 5 of the 21 items. They concluded that most grade 10 students deal competently with explicitly stated information in a wide variety of materials. Results for Domain 2 are summarized below:

Domain 2	Panel Standards		Student Performance	Panel Rating
	Acceptable	Desirable		
Literal Comprehension	71%	83%	72.7%	VERY SATISFACTORY

3.4.3 Inferential Comprehension

Twenty-four items on the grade 10 achievement surveys were assigned to Domain 3, Inferential Comprehension, and related to inference and interpretation beyond the literal level. These items require processes such as synthesis, translation, and analysis: students must make generalizations or predictions, infer relationships, draw conclusions, and infer main ideas.

Student errors on items within this domain typically involved misinterpretation or incomplete interpretation of material presented, as shown in results for item T8, based on "Wild Horses" (see Figure 3.4) where the 20% of students who chose option A apparently attempted to locate an answer in the passage. They have, in fact, applied literal comprehension strategies to an item which requires an inference, in spite of the fact that the correct selection can be made on the basis of a single phrase, i.e. "cruelly slow death by starvation."

T8 Why do some people believe that it is cruel to allow wild horse bands to develop?

%		
20	A.	Wild horses breed down domestic stock.
9	B.	Wild horses are often hunted and shot.
7	C.	Wild horses may be trapped and butchered for fox feed.
60	*D.	Wild horses will eventually starve.
3	E.	I don't know.

Student performance exceeded the "desirable" level on six items and fell between "acceptable" and "desirable" on twelve items. Overall, students did not appear to have difficulty making the inferences required by this domain. The Interpretation Panel judged performance to be Very Satisfactory. Results for Domain 3 are summarized below:

	Panel Standards		Student	Panel
Domain 3	Acceptable	Desirable	Performance	Rating
Inferential Comprehension	66%	79%	70.0%	SATISFACTORY

Where grade 10 students had difficulty with items in Domains 2 and 3, they typically failed to apply the appropriate strategy. As noted in the previous section, students who responded incorrectly to literal comprehension items frequently appeared to base their answers on an inappropriate inference; similarly, where they chose incorrect responses to inferential items, they most often selected options which consisted of words or phrases which were explicitly presented within the passage, but were irrelevant or inappropriate in terms of the question.

3.4.4 Critical Comprehension

The 1984 Reading Assessment Advisory Committee assigned highest priority to the assessment of critical reading skills. The 30 items assigned to this domain relate to analytic and evaluative skills; they require students to recognize the author's purpose, to identify probable sources of material, to analyze the use of a technique, to evaluate statements on the basis of relevance and logic, to distinguish between fact and opinion, and to perceive the author's attitudes or biases. Most of the items are associated with stimulus materials drawn from personal essays, although poetry, narrative passages, and informative material are also represented.

Students found two passages from The Snow Walker by Farley Mowat ("Winter" and "The Snow People") particularly difficult. Item S35 is the most extreme example; only one student in four chose the keyed response:

S35 What is the author's attitude toward development of our northern areas?

%		
42	A.	He doesn't show his opinion one way or the other.
15	B.	He is in favour of increased development.
25	*C.	He is NOT in favour of increased development.
6	D.	He thinks development of the north is impossible.
7	E.	I don't know.
5	omitted	

It was expected that most grade 10 students would recognize the phrase "...hasten the rape of the north..." as indicating a negative attitude. Such was not the case. It seems probable that student difficulty with the passages by Farley Mowat is at least partially attributable to the sophistication of the language and structures used; readability is high, relative to other passages.

Passages used on the grade 10 surveys were selected, in part, on the basis of their interest level for 14 and 15 year olds; consequently, many of the personal essays dealt with issues on which many students hold strong opinions. Most students were apparently able to view an author's arguments dispassionately and deal effectively with questions about the author's purpose or bias. Many students, however, appear predisposed to recognizing their own biases--or those which they find acceptable--whether or not these are evident in the text.

The Panel perceived the Domain 4 items as being relatively difficult; consequently, the "acceptable" standard of 64% is slightly lower than those associated with other domains. The Interpretation Panel judged overall performance on this domain to be Satisfactory, noting that mean performance of 63.2% correct was virtually coincidental with the "acceptable" standard established as 64%. However, in view of the contention of the Advisory Committee that a literate, educated population must be able to evaluate both the message and the form of written materials, the results presented in this section offer some cause for concern. For 15 of 30 items, student performance did not reach the Panel's "acceptable" standard. Many students are apparently unable to examine print material critically. Results are summarized below:

	Panel Standards			
Domain 4	Acceptable	Desirable	Student Performance	Panel Rating
Critical Comprehension	64%	77%	63.2%	SATISFACTORY

3.4.5 Locates and Uses Information

Domain 5, Locates and Uses Information, was represented by 24 items assigned to two objectives at grade 10. The 12 items associated with Objective 5.1 required students to interpret information provided in standard formats. Objective 5.2, also represented by 12 items, required students to derive information from graphic and tabular formats.

The Interpretation Panel set relatively high standards--72% for "acceptable" and 84% for "desirable"--for Objective 5.1, Locates Information, contending that a high level of competence on the associated items is required for success in secondary school, particularly in content area subjects.

Students had most difficulty with 3 items associated with a table of contents from a geology text. The stimulus material was adapted from galley proofs of the text authorized for General Science 10. Item T37 asked what kind of textbook the table of contents was taken from; 29% incorrectly selected "social studies." Item T30 asked students to indicate the section which would be most useful as an overview; 23% chose a section entitled "Why Do Earthquakes Occur?", rather than the keyed response, "Summary and Review." These students appear to have no systematic strategy for effective use of a table of contents. Student performance was weakest on an item which required that students recognize a third-level heading; 44% incorrectly chose the relevant second-level heading, although the third specifically addressed the question. Students had less difficulty in differentiating among chapter and major section headings.

The Interpretation Panel judged student performance to be Satisfactory with mean percent correct coincidental with the acceptable standard of 72%.

Stimulus material for Objective 5.2, Interprets Graphic Material, included a bar graph showing softwood and hardwood reserves by province, and a chart outlining salient characteristics of various biomes. Students found these items relatively easy; performance exceeded the "desirable" standard of 84% on 7 items of 12 items. The Interpretation Panel judged performance on this objective to be Very Satisfactory with mean percent correct of 80.3 comparing favourably with the "acceptable" standard of 73%.

Results for the Domain 5 objectives are summarized below:

Domain 5: Locates & Uses Information	Panel Standards Acceptable	Panel Standards Desirable	Student Performance	Panel Rating
5.1 Locates Information	72%	84%	71.9%	SATISFACTORY
5.2 Interprets Graphs/Tables	73%	84%	80.3%	VERY SATISFACTORY

When panelists considered overall performance on Domain 5, they judged it to be Very Satisfactory. Most grade 10 students, they concluded, are able to deal with standard locational and graphic formats.

3.4.6 Summary: Grade 10 Achievement Survey

The Interpretation Panel rated performance on three of five domains as Very Satisfactory. Typically, students had little difficulty with items which dealt with literal or inferential comprehension, or with standard location formats or simple graphs or charts. Performance on Domain 1, Understands Words and Expressions, was judged to be Satisfactory, with some concern expressed for student ability to deal with multiple meaning words. The Advisory Committee considered Domain 4, Critical Comprehension, to be the most important domain for assessment at grade 10. The Interpretation Panel judged results for this domain to be Satisfactory; however, there are some areas of serious concern. While most students dealt effectively with critical comprehension tasks, many grade 10 students apparently lack the skills and strategies required to evaluate written materials.

3.5 Comparative Analyses of Student Achievement Levels

The 1984 assessment surveys and analyses were designed so as to facilitate comparisons of performance levels across grades. This section also examines Interpretation Panel judgements across grades and across the three B.C. reading assessments. Comparisons of student performance levels across B.C. assessments have been described in earlier sections of this Chapter; they are summarized briefly here.

3.5.1 Cross-grade Item Results

Table 3.1 summarizes results for items used at more than one grade level. For the 10 common items at grades 4 and 7, the mean difference is approximately 17%. Not surprisingly, differences were most apparent for items where grade 4 performance was relatively low, and least apparent where a high percentage of grade 4 students selected the correct answer. Comparative data for 11 items used at both grades 7 and 10 indicate that, on average, items were answered correctly by 10% more students at grades 10 than at grade 7. The difference in performance is relatively stable across items.

Table 3.1
Summary: Results of Cross-grade Items

Number of Common items	Mean Percent Correct		
	Grade 4	Grade 7	Grade 10
10	65.5	82.1	--
11	--	69.1	79.3

Two items were used at all three grade levels; response distributions by grade are given below. As noted earlier, grade 4 students were more likely to select "I don't know" than their older counterparts. In this case, it is somewhat discouraging to find more than 25% choosing not to attempt items with the cue words most likely in the stem. Younger students who selected incorrect responses were most likely to base their choice on association; thus, the associative response "royal family" was the most frequent incorrect choice at grade 4, but the least frequent at grade 10.

We were surprised to see them. We did not know they were in France; our meeting was fortuitous.
The word fortuitous most likely means...

		Percent of Students		
		Grade 4	Grade 7	Grade 10
A.	well-planned.	19	8	3
B.	in far places.	14	5	1
C.	in a group of four.	7	2	1
D.	*accidental.	32	78	92
E.	I don't know.	27	6	2

A shout went up from the crowd as they saw the bright green and yellow livery of the palace guard.
The word livery most likely means...

A.	*special uniform.	51	77	83
B.	cannons.	5	4	3
C.	horses.	3	3	4
D.	royal family.	14	6	2
E.	I don't know.	26	10	7

3.5.2 Interpretation Panel Judgements Across Grade Levels

Table 3.2 shows the Interpretation Panel ratings of student performance by objective, domain, and grade. Interpretation Panels at all grades rated student performance on items associated with literal understanding and with locating and using information as 4 on a 5-point scale, (Very Satisfactory). At grade 4, Panelists assigned the same rating--4 on a 5-point scale--to all domains. At both grades 7 and 10, performance on items requiring critical comprehension was rated 3 on a 5-point scale or Satisfactory. At grade 7, panelists rated inferential comprehension Satisfactory, and understanding words and expressions Very Satisfactory; the reverse was true at grade 10.

Table 3.2
Interpretation Panel Ratings of
Student Performance by Grade

Domain	Rating*		
	Grade 4	Grade 7	Grade 10
Words and expressions	4	4	3
Literal comprehension	4	4	4
Inferential comprehension	4	3	4
Critical comprehension	–	3	3
Locates and Uses Information	4	4	4

* 5 = Strong; 4 = Very Satisfactory; 3 = Satisfactory; 2 = Marginally Satisfactory; and 1 = Weak.

3.5.3 Interpretation Panel Judgements Across Assessments

Table 3.3 compares Interpretation Panel ratings for 1976/77, 1980, and 1984, indicating the relative degree to which students met Panel expectations. It is important to keep in mind that domain definitions, while similar, are not congruent across assessments. Further, neither items nor grade levels were held constant across the three assessments. Finally, the 1976/77 Panel used a 3-point rating scale, represented here as 1 = Weak, 3 = Satisfactory, and 5 = Strong--in fact, all domains discussed here were rated Satisfactory.

In 1984, grade 4 student performance on Domain 1 items was more favourably received than was the case in 1976 and 1980. However, when performance on individual objectives is considered (see Section 3.3.1 of this report) both student performance and Panel perception of results were extremely stable across the two assessments. The 1984 overall Domain 1 rating for grade 7 is comparable to earlier domain ratings for grade 8, although clear differences for specific objectives were described earlier in section 3.3.1. The basis for comparing ratings is weakest for grade 10 students, since previously reading assessments involved grade 12 students. Overall, the 1984 grade 10 Panel was more satisfied with Domain 1 results than the 1980 grade 12 Panel had been.

For comprehension, the basis for comparison is extremely weak due to variations in definition, stimulus material, item difficulty, and grade level. It is interesting to note that the grade 7 and 8 ratings are extremely stable over time; in fact, there is no variation between 1980 and 1984. Ratings at other grade levels are also relatively stable, although there is a slight increase at grade 4, and somewhat greater satisfaction with current grade 10 performance as compared to previous grade 12 performance.

Table 3.3
Summary: Interpretation Panel Ratings for 1976/77, 1980 and 1984

Grade/Objective	Rating 1976/77	1980	1984
Grade 4			
Words and expressions	3	3	4
Literal comprehension	3	4	4
Inferential/critical comprehension	3	3	4
Grade 7/8*			
Words and expressions	3+	3+	4
Literal comprehension	3	4	4
Inferential comprehension	3	3	3
Critical comprehension	3	3	3
Grade 10/12*			
Words and expressions	3	2	3
Literal comprehension	3	3	4
Inferential comprehension	3	3	4
Critical comprehension	3	3+	3

* 1976/77 and 1980 ratings are for grades 8 and 12 performance, while 1984 ratings are for grades 7 and 10.

Overall, then, the comparative data indicate that:

1. Consistent, substantial gains in performance are associated with higher grade levels;

2. The grade 4 Panel perceived student performance most favourably, assigning Very Satisfactory ratings to all domains. At both grades 7 and 10, three domains were rated Very Satisfactory, while two were judged Satisfactory. At all grade levels, Panelists rated performance on literal comprehension items and on those associated with locating and using information as Very Satisfactory.

3. At grade 4, where a clear basis for comparison exists, comparative data indicated stability in both student performance and Panel expectations from 1980 to 1984. Where common items were used, 1984 grade 7 performance levels were similar to 1980 grade 8 levels. At grade 10, comparisons with previous assessments are generally not informative.

CHAPTER 4

STUDENT BACKGROUND CHARACTERISTICS AND AFFECTIVE RESPONSES

4.1 Overview

This chapter describes the student population at each grade level in terms of background characteristics and affective responses. First, results of the background questionnaire are presented by grade; then, associations among background variables are described. Finally, responses to the Estes Reading Attitude Scale, to items focusing on perceived value of reading and on preferred reading materials, and to open-ended affective questions are presented by grade level. Results are based on responses from 33 258 grade 4 students, 35 616 grade 7 students, and 29 385 grade 10 students.

4.2 Student Background Characteristics

The 1984 Reading Assessment surveys focused considerable attention on student background characteristics. Students at each grade level responded to 18 to 20 questions which elicited information about biodemographic and socio-cultural characteristics, school and classroom features, instructional status, reading and leisure activities, and--in the case of grade 10 students--future plans. At each grade level, all students responded to the same series of questions; as well, most questions and response options were held constant across grades.

4.2.1 Biodemographic and Socio-cultural Characteristics

The distribution of students by gender, by first language, by language currently spoken at home, and by reported number of books in the home indicated a relatively stable student population. Males and females are equally represented at each grade level. The percent of students who speak English as a second language ranges from 13.4 to 15.5; the percent of those who most often speak a language other than English at home from 6.9 to 8.5. Over the last two years, the proportion of B.C. students who speak English as a second language appears to be unchanged; however, there is a slight increase in the proportion of students who are not regularly using English in their homes. These data suggest that the need for ESL programs and for appropriate resources and support materials within the regular Language Arts program has not declined. Clearly, many B.C. teachers must deal with the special requirements and difficulties of second language students on a regular and continuing basis.

Students' estimates of the number of books in their homes have been shown to be effective predictors of student achievement (Armor, 1972; Bachman, 1970; Flanagan & Cooley, 1966; Mayeske, Okada, Cohen, Beaton and Wisler, 1973; Smith, 1972). B.C. students' estimates are relatively stable across the three grade levels surveyed, although grade 4 students were slightly more likely to report very high or very low numbers. At each grade, over 45% of students report more than 250 books in their homes, while between 5 and 9% report fewer than 25. On this variable, considered a surrogate for sociocultural status, the B.C. student population scores high in both relative--compared, for example, to the American data reported by Coleman and his colleagues (1966)--and absolute terms.

4.2.2 Classroom and Instructional Variables

Educators and members of the public maintain a strong interest--and hold strong opinions--about the effects of such organizational features as school size, split-grade classrooms, and language of instruction. Table 4.1 shows the distribution of these variables for each grade, along with selected programmatic features. At each grade, between 70 and 80% of students are assigned to classes of 20 to 30 students. Grade 7 students are most likely to attend larger classes--approximately 18% attend classes of more than 30 students. Grade 4 students, however, are more likely to attend split-grade classes. The percent of students attending learning assistance declines sharply with grade-level. Most grades 4 and 7 students are using the Ginn 720 reading series, although the proportion drops somewhat between grades 4 and 7.

4.2.3 Reading and Other Leisure Activities

Results of questions which dealt with recreational reading and other leisure activities are displayed in Table 4.2. When students were asked to report on the previous day's reading and television watching nearly twice as many students reported watching television as reported leisure reading. Further, while between 5 and 7% spent more than two hours reading, between 33 and 40% watched more than two hours of television.

Nearly 50% of grade 4 students reported reading a storybook in their spare time during the previous day; more than 25% had read a comic book. At grade 7, over 40% had read a novel, and over 20% a magazine. Grade 10 students were less likely to have read a novel (37%) but more likely to have read a magazine (31%). It is important to note that this survey was completed while the two B.C. newspapers with the largest circulation, The Province and The Sun were not publishing due to a labour dispute. Consequently, the percent of students who reported reading a newspaper is likely to be biased.

Students were also asked how many school and public library books they had borrowed in the previous month; reported library use varies dramatically by grade. Over 90% of grades 4 and 7 students borrowed at least one library book in the previous month, compared to 70% of grade 10 students. Further, nearly 60% of grade 4 students borrowed six or more books, compared with 42% of grade 7 students, and 17% of grade 10 students. Clearly, libraries represent a much more important source of reading materials to younger children.

Two questions dealt with most and least favoured leisure activities. At all grades, the highest percentage of students selected Play a game or sport as their most likely leisure activity; less than 10% selected this as their least likely activity. Television ranked second as a favoured activity followed by

Table 4.1
Classroom and Instructional Characteristics by Grade

Variable/Value		Percent of Students Grade 4	 Grade 7	 Grade 10
Class size:	0-15	1.1	0.9	5.6
	16-20	6.1	5.0	12.2
	21-25	36.1	25.2	26.7
	26-30	46.5	51.3	42.9
	31-35	9.6	16.8	12.1
	36+	0.7	0.8	0.5
Program:	Regular	96.7	97.9	98.1
	Cadre	0.4	0.2	0.8
	French Immersion	2.6	1.6	1.0
No. of grades in classroom:	1	67.4	84.9	n/a
	2	31.4	14.4	n/a
	3	1.0	0.6	n/a
	4+	0.2	0.1	n/a
Attends learning assistance:				
	YES	18.2	10.8	8.5
	NO	81.7	89.0	91.1
Attended ESL ever:				
	YES	6.8	6.2	6.9
	NO	93.1	93.7	92.6
Attends ESL now:				
	YES	3.1	2.4	2.9
	NO	96.8	97.5	96.8
Current reader*:				
	Ginn	72.9	61.5	n/a
	Holt, Rinehart & Winston	11.3	14.2	n/a
	Copp Clark	n/a	27.0	n/a
	Nelson	3.3	1.1	n/a
	Gage	0.8	1.5	n/a
	Other	10.7	13.5	n/a
	None	5.6	7.0	n/a
Reading instruction in English class:				
	YES	n/a	n/a	43.1
	NO	n/a	n/a	56.3

* Students were permitted more than 1 response; thus, the column does not sum to 100. At each grade, relevant specific titles were listed. These are discussed in Chapter 4 of the General Report.

Table 4.2
Reported Reading/Leisure Activities by Grade

Variable/value	Percent of Students Grade 4	 Grade 7	 Grade 10
Time reading yesterday:			
None	32.8	23.8	26.1
<1/2 h	26.3	26.3	28.0
1/2 - 1 h	23.8	29.1	27.1
1 - 2 h	10.1	14.0	13.1
2h+	7.0	6.6	5.6
TV time yesterday:			
None	16.3	11.8	14.8
<1h	16.1	12.8	14.2
1h	15.7	14.8	14.8
2h	17.1	21.4	23.3
3h	12.0	17.1	17.0
4h+	22.6	22.1	15.9
Material read yesterday*:			
Storybook/Novel	47.8	43.8	36.7
Newspaper	10.9	17.8	26.3
Magazine	12.2	22.6	31.4
Comic book	26.4	17.3	6.4
Non-fiction	-	14.3	11.2
Nothing	31.1	21.9	24.8
Library books last month:			
0	5.7	9.1	30.1
1 or 2	14.8	18.6	29.0
3 - 5	20.5	29.6	23.8
6 - 10	24.0	22.1	10.3
10+	34.4	20.2	6.5
Preferred leisure activity:			
Play a game or sport	42.8	48.6	46.9
Watch TV	21.5	23.2	23.1
Read a book or story	15.5	15.7	15.6
Go to a movie	18.7	10.1	10.4
Read a magazine	1.4	2.2	3.9
Least preferred activity:			
Read a magazine	35.5	25.4	15.9
Go to a movie	23.0	30.8	28.4
Read a book or story	16.8	27.1	34.8
Watch TV	15.9	10.3	10.9
Play a game or sport	8.6	6.4	9.9

* More than one response permitted; column exceeds 100%.

reading a book at grade 7 and 10, and watching a movie at grade 4. Grade 7 and 10 students were much more likely than grade 4 students to select reading a book as their least likely activity.

4.2.4 Future Plans

Grade 10 students were asked to indicate their postsecondary plans. The largest group of students, over 36%, indicated plans to attend university. The percent of students planning to attend university may be unrealistically high, given current admission requirements and enrollment restrictions, and is nearly double the percent of grade 12 students who indicated similar plans in the 1982 Science Assessment survey. It seems likely that many of these students will first enroll in a community college program.

Table 4.3
Post-secondary Plans: Grade 10 Students

Plan to ...	Percent of Students
Attend university	36.2
Attend community college	14.6
Attend technical institute	9.6
Look for a job	8.8
Attend business school	3.7
Other plans	8.5
Undecided	17.8
Don't plan to finish high school	0.7

4.3 Associations Among Background Characteristics

At each grade level, a 10% random sample of student responses--approximately 3000--were analyzed to examine associations among selected background variables. These analyses were undertaken in order to enhance description of the population, to identify and describe specific subpopulations, and to provide a basis for the investigation of the role of background characteristics in predicting student achievement. Details of these associations may be found in the General Report. Findings included:

1. Male students are more likely to receive learning assistance in grade 4 and 7, but not in grade 10;

2. Many students whose dominant home language is not English are currently receiving learning assistance at all grade levels;

3. Grades 4 and 7 second language students are more likely to be assigned to learning assistance than to ESL classes, but their grade 10 counterparts are not;

4. Between 29 and 33% of all second language students have attended ESL classes compared with 42 to 47% of students who do not currently speak English in their homes;

5. Gender is one of the strongest predictors of leisure activities. For boys, the most preferred activity was a game or a sport; this preference increased from 49% at grade 4 to 59% at grade 7 and 61% at grade 10. Girls also preferred this category, but preference remained stable at 35-36% across the grades;

6. For boys, the least desirable activity at grade 4 was reading a book or story, or going to a movie; at grade 7, it was reading a book; and at grade 10, attending a movie. At grades 4 and 7, girls identified going to a movie as least desirable, but at grade 10, nearly one-half of the girls identified reading a book as the least desirable of listed activities;

7. At all grades, the number of books in the home is positively associated with choice of reading as a preferred activity, with amount of reading, and with library use, but negatively associated with amount of television watched;

8. At grade 10, students who live in homes with extensive amounts of reading material and whose parents have completed relatively high levels of formal education are more likely to report higher engagement in leisure reading activities and lower amounts of television watching. These students are also more likely to report that they plan to attend university; and

9. High levels of recreational reading are associated with postsecondary academic aspirations.

4.4 Affective Variables

Within each grade level, each test form included a different set of affective questions. These items were held constant across grade levels.

4.4.1 The Estes Reading Attitude Survey

Raw scores on the Estes Reading Attitude Scale range from 15 (extremely negative) to 75 (extremely positive). In summarizing B.C. student performance in 1980, Tuinman & Kendall reported the percent of students whose raw scores fell into the following categories: extremely negative (15-26); negative (27-38); neutral (39-50); positive (51-62); or extremely positive (63-75). These intervals were used to summarize the data shown in Table 4.4. which suggests that ERAS scores are relatively stable. Overall, students displayed relatively positive attitudes toward reading. Grade 4 scores show a slight decline from 1980 to 1984. In 1984, grade 7 scores tended to be highest among the grade levels tested; in 1980, grade 8 scores were lowest. On the other hand, 1984 grade 10 scores were somewhat lower than 1980 grade 12 scores; in fact, the distribution resembles that for 1980 grade 8 students. In terms of attitude, then, it may well be that the grade 10 students are more like their younger fellow junior secondary students than their older senior secondary counterparts.

Table 4.4
Estes Reading Attitude Survey:
Results by Grade for 1980 and 1984

Grade/Year	Strongly Negative	Negative	Neutral	Positive	Strongly Positive
Grade 4: 1984	2	5	25	47	21
Grade 4: 1980	1	5	22	45	28
Grade 7: 1984	1	6	21	48	24
Grade 8: 1980	2	8	25	45	20
Grade 10: 1984	3	10	19	46	22
Grade 12: 1980	1	5	19	48	27

4.4.2 Perceived Value of Reading for Different Purposes

Students at each grade level were asked to indicate how useful they perceived reading to be for a series of ten purposes. Response values from 1 to 5 were assigned with 5 indicating an extremely high value (Very Useful) and 1 associated with an extremely low value (Not at All Useful). Four subscale scores were created; mean subscale values are shown in Table 4.5.

Table 4.5
Value of Reading Scale: Mean Subscale Scores by Grade

Subscale	Mean Scale Value		
	Grade 4	Grade 7	Grade 10
Belief in the value of reading to...			
1. Enhance achievement	4.4	4.3	3.9
2. Acquire information	4.1	4.1	4.2
3. Derive enjoyment	3.8	4.0	4.0
4. Increase understanding	3.8	3.5	3.6

These results are consistent with those reported by Neuman (1980) who examined student responses to the essay topic "Why I like to read," and found that the pattern of responses changed dramatically between grades 7 and 8. The B.C. students described here apparently maintain a stable belief in the value of reading to acquire information; older students, however, are less likely to perceive such learning as a means of improving school achievement.

4.4.3 Preferences for Leisure and School-Related Reading Materials

A third set of affective items attempted to identify student attitudes toward various types of reading materials including assigned literature and content area textbooks. First, students were asked how much they liked various materials--novels, comic books, biographies--when these were self-selected. For these seven items, scale values ranged from 1 (Never Read Them) to 5 (Like Them Very Much). A second set of items dealt with school-related materials with scale values ranging from 1 (Usually Don't Like Them) to 4 (Like Them Very Much). The percent of students who reported no textbook or assigned reading in each category is reported separately.

As shown in Table 4.6, enjoyment of fiction and the three listed categories of non-fiction is stable across the three grade levels. As anticipated, grade-level differences were most apparent for newspapers, magazines and comic/cartoon books. Overall, grade 4 students preferred comic/cartoon books to all other materials and assigned lowest ratings to newspapers. Preference for both magazines and newspapers increased with grade level, while ratings for comic/cartoon books decreased. At grade 10, magazines received the highest rating; at grade 7, fiction was most popular. Grade 7 and 10 students assigned their lowest ratings to "books that tell you how to make, fix or operate something". The least frequent response for most items at all grade levels was "Can't Decide;" students apparently have clear and definite opinions about reading material.

Table 4.6
Summary of Results: Reported Enjoyment Toward Various Types of Reading Material

Material		Mean Scale Value		
		Grade 4	Grade 7	Grade 10
Fiction		4.0	4.2	4.1
Nonfiction:	biography	3.4	3.4	3.4
	"how-to"	3.3	3.1	3.1
	other nonfiction	3.6	3.6	3.6
Magazines		3.3	4.0	4.3
Comic books		4.4	3.9	3.2
Newspapers		2.8	3.4	3.8

Table 4.7 summarizes student perceptions about school-assigned reading, and indicates the percent of students who reported no assigned textbook or reading in various categories. Students at all grades assigned highest ratings to novels, followed by current reader at grades 4 and 7; short stories at grade 10. While grades 4 and 10 students ranked poetry third, grade 7 students assigned it the lowest ratings among the materials listed. Overall, students assigned higher ratings to literature/language arts materials than to content area textbooks. As well, ratings for all materials declined as grade level increased, with the greatest differences apparent between grades 4 and 7 ratings of readers and poetry.

Table 4.7 also reports the percent of students who do not read or use the listed materials in school, and includes some startling data: over 17% of grade 7 students, and more than 10% of grade 10 students reported that they do not read poetry in school. These data suggest that in one out of every six grade 7 classrooms, and in one out of every ten grade 10 English classes, no poetry is read.

Table 4.7
Summary of Results: Reported Enjoyment Use
of School-related Materials by Grade

Material	Mean 4-Point Scale Value*		
	Grade 4	Grade 7	Grade 10
novels	3.2	2.9	2.8
reader/short stories	3.1	2.6	2.7
poetry	2.9	2.4	2.3
science	2.7	2.5	2.2
social studies	2.8	2.6	2.1

Percent of students who report no textbook or assigned school reading in each category:

	Percent of students		
	Grade 4	Grade 7	Grade 10
novels	3.7	2.3	0.8
reader/short stories	2.9	4.5	3.2
poetry	7.7	17.4	10.6
science	9.3	6.5	3.8
social studies	29.3	13.5	4.3

* 1 = don't like them; 2 = can't decide; 3 = sometimes like them; 4 = like them very much.

4.4.4 Open-ended Responses

At each grade level, 4% of students--typically one per classroom--responded to affective and achievement items by constructing rather than selecting their responses. Procedures are described in Chapter 2; achievement results in Chapter 5. Three items focused on student preferences, behaviour, and values.

At each grade level, a random sample of 320 student response booklets was drawn, representing approximately 1% of the total student population. Student responses to the questions listed above were classified and coded using standard content analysis techniques. (See Chapter 6 of the General Report for a detailed description of procedures.) Results are summarized in Tables 4.8 and 4.9.

At all grades, both boys and girls identified fiction as their preferred reading material. As shown in Table 4.8, only a slight downward shift is apparent across grade levels. Further, at all grades, more girls than boys reported fiction as their preferred material. Boys were more likely to select magazines and nonfiction; as well, reported magazine reading increased with age. At grade 4, 26% of boys reported that they most enjoyed comic books; this percentage declines sharply with age.

Table 4.8
Summary: Preferred Leisure Reading Material by Gender Within Grade Level: Percent of Responses per Category

Category	Grade 4		Grade 7		Grade 10	
	M	F	M	F	M	F
Preferred Material						
Fiction	62.1	85.9	61.9	82.8	55.2	77.9
Magazines	4.0	2.6	18.9	6.9	25.5	13.4
Nonfiction	7.9	2.5	5.8	5.1	9.2	3.6
Newspapers	0.0	4.5	2.5	0.6	8.5	2.4
Comic books	26.0	4.5	6.6	1.7	1.4	0.6
No response	0.0	0.0	4.3	2.9	0.2	2.1
Most recently read						
Fiction	46.7	66.3	52.0	68.3	38.2	58.8
Magazines	16.1	14.0	20.7	14.4	32.6	20.4
Nonfiction	9.6	4.0	5.8	6.2	15.1	10.5
Newspapers	9.7	7.3	9.1	5.2	12.3	9.3
Comic books	16.1	7.9	3.3	1.1	1.4	0.6
No response/ Not identifiable	1.8	0.5	9.1	4.8	0.4	0.4

Table 4.9 summarizes students' responses regarding the importance of reading. Students were asked to list two ways in which reading was important to them; entries in Table 4.9 are percent of total responses. At all grades, the most frequent response dealt with reading as a means of obtaining information, of improving language skills--reading, vocabulary, and spelling, for example--and of deriving enjoyment. The percent of responses related to enjoyment was relatively constant across genders and grades. Grade 4 students and grade 10 boys were most likely to identify reading as a means of obtaining information, and grade 7 boys as a means of improving language skills. At grade 4, it is interesting to note that only 14% of boys--as compared with 22% of girls--identified reading as important for developing language skills. At all grades, boys are somewhat more likely than girls to see reading as a means of stimulation (e.g. "It makes your brain work"), while girls are more likely to view it as escape, particularly at grade 10.

Table 4.9
Summary: Importance of Reading by Gender Within Grade:
Percent of Responses per Category

Category	Grade 4		Grade 7		Grade 10	
	M	F	M	F	M	F
Obtain information	32.2	28.3	20.3	21.9	27.0	20.8
Improve language/ reading skills	14.4	22.0	24.2	21.5	17.9	21.9
Enjoyment	15.9	18.3	17.8	15.5	15.6	15.6
Fill time	5.6	5.0	12.8	10.6	8.7	9.0
Escape	0.7	1.2	3.8	7.2	3.8	12.0
Stimulation	5.2	2.8	4.2	4.1	6.9	3.0
Functional	2.6	3.1	4.6	2.6	4.2	2.1
Understand others	2.6	3.1	1.2	4.3	3.8	4.2
Improve marks	3.7	5.6	2.9	3.4	1.4	0.3
Other	4.2	5.6	2.8	1.2	3.0	0.3
Missing	11.9	5.0	5.4	4.6	6.2	4.2

Complete classification systems and sample responses for the data summarized here may be found in Chapter 6 of the General Report.

4.4.5 Summary

Results of the four sets of affective items provide an interesting picture of B.C. student attitudes and values:

1. Overall, students displayed positive attitudes toward reading. These appear to be relatively stable over grade level and time.

2. Students at all grade levels assigned higher values to reading as a means of acquiring knowledge and skills, than as a way of increasing understanding of self and others. Perceived value of reading to acquire knowledge increases with grade level, while reading to understand self and others decreases.

3. When students, themselves, supplied reasons why reading is important, they most often mentioned acquiring information, improving language skills, and enjoyment. Few students at any grade level mentioned reading as a means of understanding self or others.

4. At all grades, B.C. students displayed positive attitudes toward reading fiction; they showed lower degrees of predisposition toward non-fiction materials.

5. Preference for comic/cartoon books, extremely high at grade 4, declines markedly with grade level, while interest in newspapers and magazines increases. At grade 10, magazines received the highest rating of the materials listed. On the open-ended questions, grade 10 boys reported a high degree of preference and extensive recent reading of magazines. Only grade 4 boys showed any marked interest in comic books.

6. Among school-related materials, students at all grades displayed the most positive attitudes toward those associated with English/Language Arts; the least positive toward content area textbooks. The one exception occurs at grade 7, where students rated poetry below all other materials.

8. Few students report not reading novels, readers/short stories, or science texts in school. The use of social studies texts, relatively low at grade 4, increases dramatically with grade level.

9. Substantial proportions of students reported that they do not read poetry in school; 8% at grade 4; 17% at grade 7; and, 11% at grade 10. This is an unanticipated and distressing result.

CHAPTER 5

OPEN-ENDED RESPONSES

5.1 Overview

This chapter summarizes procedures and results for items which solicited open-ended responses. Sample items, rating scales and response distributions are presented along with results in the form of percent of responses judged to be "minimally acceptable" for each item. This chapter, then, provides only a brief overview of a complex set of procedures and results; interested readers are referred to Chapter 5 of the General Report, where marking scales, response distributions, and patterns of results are detailed and analyzed.

5.2 Background

Previous B.C. assessments of reading have relied exclusively on multiple-choice items which permit relatively broad sampling of material and ease of scoring, and at the same time prevent contamination of results by variability in student productive language skills. While the multiple-choice format is the single most effective and widely used technique for wide-scale assessment, it prevents consideration of many important objectives, and causes others to be measured in artificial and unnatural ways. Perhaps more importantly, it presents the implicit message that the Ministry and associated agencies believe that objectives which are amenable to fixed-response are the most--or, indeed, the only--important objectives, or, alternately, that it is the only method which permits reliable and valid measurement. Both beliefs are mistaken: many important objectives are best measured using open-ended response formats; valid and reliable procedures are available. Such formats are required whenever student ability to respond, to substantiate, to organize, or to integrate is of interest. Clearly, many important objectives for reading literature and for applying study and research skills require this response mode.

The 1984 Reading Assessment solicited open-ended responses to selected stimulus materials from a 4% provincial sample of students, typically one student per classroom. Analysis of student responses to open-ended questions was designed to provide three types of information:

1. The specific nature of student responses to the tasks given. Such information is developed through use of classification systems and is descriptive rather than evaluative.

2. The proportion of students providing each of several qualitatively different categories of response. This information is produced through the use of anchored rating scales; complex tasks require several "scale-points" or categories--as many as can be reliably distinguished by teachers at that grade level.

3. The proportion of student responses which exceeds a given standard. Expert judgement is required to define "minimally acceptable" or "satisfactory" performance in terms of the relevant rating scale.

5.3 Scoring, Analysis, and Interpretation

A rating scale was developed for each item, using approximately 100 actual student responses to derive qualitative scoring categories. For selected items, classification systems were also developed to record the content--as opposed to the quality--of student responses. During the Interpretation Panel meetings, groups of Panelists used the rating scales and sample student responses to define "minimally acceptable" and "desirable" responses for each item. Later, the teams of markers independently determined similar standards. The definitions of "minimally acceptable" were congruent in all cases; markers and Panelists agreed as to what constituted a "minimally acceptable" response to each item.

In early July, teams of elementary and secondary teachers scored the open-ended responses working under the direction of the Contract Team. A sample of 320 student booklets was scored at each grade level. Interrater reliabilities for the rating scales ranged from .84 to 1.00.

There was some concern that students who responded to open-ended questions were not always randomly selected. Consequently, background information for the Q-form sample was compared with that for the total population. At grades 4 and 10, a slight gender bias was apparent: girls were somewhat more likely (54%) than boys (46%) to have been assigned the open-ended questions. At grade 7, this bias was striking, and unlikely to have been a chance occurrence: 59% of the students who wrote the Q-forms were female, compared with 49% of all grade 7 students who participated in the assessment. It is clear--and unfortunate--that many grade 7 teachers ignored instructions regarding test administration.

Post-stratification procedures were used to correct the apparent gender bias in the sample; the results reported here have been adjusted so that males' and females' responses make an equal contribution. (See Chapter 5 of the General Report for a more detailed discussion.)

5.4 Results

Table 5.1 summarizes results of the open-ended questions. Objectives assessed are organized within type of stimulus material. For each objective, the percent of students whose responses were judged to be "minimally acceptable" is given for each grade at which that stimulus/objective combination appeared. It is important to keep in mind that both stimulus materials and rating scales varied across the grade levels.

Sample items, scales, and results are shown in Figures 5.1, 5.2, and 5.3. The percent of students whose answers were assigned to each of the scale points is given along with broken lines which indicate "minimally acceptable" and "desirable" performance levels.

5.4.1 Grade 4

Grade 4 students responded to eight open-ended items associated with four stimulus passages. Two items related to a picture of a pioneer home: students were asked to identify two details which suggested that there were trees

Table 5.1
Summary: Results of Open-ended Questions

Stimulus/objective	Percent Acceptable Responses Grade 4	Grade 7	Grade 10
Picture:			
Selects relevant details	93.4	n/a	n/a
Recognizes differences	92.6	n/a	n/a
Narrative:			
Predicts outcome	90.8	67.7	n/a
Makes/substantiates inferences about character	65.8	74.3	76.6
Infers author's intent	n/a	64.7	75.8
Infers motivation	n/a	80.6	n/a
Substantiates personal evaluation	n/a	79.4	76.6
Poetry:			
Infers narrator's reaction	n/a	n/a	58.2
Interprets poetic language	n/a	82.7	n/a
Substantiates personal evaluation	39.0	66.6	57.8
Informative material:			
Locates relevant details	93.1	97.4	n/a
Makes generalizations	87.2	81.2	n/a
Locates/organizes information	77.5	83.8	85.7
Personal essay:			
Organizes information	n/a	n/a	66.7
Infers author's point-of-view	n/a	n/a	33.9
Evaluates information	n/a	77.7	n/a

nearby, and to list three ways in which the pictured home differed from their own homes. Students had no difficulty with either item. As shown in Table 5.1, over 90% provided "minimally acceptable" responses; as well, over 70% of responses exceeded the "desirable" standard.

Two items were associated with a short story, "The Broken Window." The first asked students to predict consequences for one of the characters. To respond to this item, students had to correctly interpret events in the story as indicating the "guilt" of one boy, Mike, and to hypothesize consequences consistent with his behaviour. Over 90% of students did so. This result is encouraging. Students had more difficulty with the second item, which asked them to decide which of the two policemen in the story they would prefer to deal with if they faced an unjust accusation, and to substantiate their decision. Most students had no difficulty making a logical selection; only

65%, however, were able to provide a specific reason. A relatively large proportion of students--25%--provided only a vague generality, such as "He was nicer." This result was not unexpected, and is not a serious cause for concern at grade 4. However, it does suggest that teachers of intermediate grades be alert to this propensity for unsupported generalization, and assist students to recognize the need for providing specific evidence to substantiate their opinions.

Grades 4 and 7 students responded to three items associated with an informative passage about Arctic Foxes. Students had no difficulty with a literal comprehension item which asked them to locate relevant information. They had slightly more difficulty with an item which called for generalizations or predictions about the effects of climate on the foxes. For this item, the "minimally acceptable" standard for grade 4 was lower than that for grade 7, thus the relevant entries in Table 5.1 are not directly comparable. Finally, students were given a chart outline and asked to complete it using relevant information from the passage. At grade 4, 78% of students provided at least "minimally acceptable" responses, compared with 84% at grade 7. Given an outline in a familiar format, then, most grades 4 and 7 students are able to locate relevant information and assign it to appropriate categories. This, too, is an encouraging result, in view of the importance of these skills in dealing with content area material.

At both grades 4 and 7, a poem, "The Mouse" (see Figure 3.1) was presented, along with an item which asked students to make and substantiate a personal response. The item, the rating scale, and response distributions for both grades are shown in Figure 5.1. Students had no difficulty making a judgement: at grade 4, 90% reported that they liked the poem; 10% that they did not. At grade 7, 82% liked the poem, while 17% did not, and 1% could not decide. Most students, however, failed to provide specific reasons or examples to support their opinions. Results for this item offer cause for concern at both grades 4 and 7. The "minimally acceptable" level is not particularly demanding--as shown in Figure 5.1, any paper which offered at least one reason or criterion which was clearly related to the poem exceeded the "minimally acceptable" level. At grade 4, 39% of the papers qualified; at grade 7, 67%. Table 5.2 summarizes the nature of the support grades 4 and 7 students provided.

Table 5.2
Summary: Results of Content Analysis of Responses
for Personal Evaluation of a Poem

Category	Percent of Students Grade 4	 Grade 7
No substantiation offered	60.5	33.1
Responds to theme/interpretation	10.3	29.6
Responds to development/content	9.1	18.3
Responds to language/imagery	8.8	7.0
Responds to form/technique	8.6	6.4
Responds to topic	2.7	5.6

Q. DID YOU LIKE READING THIS POEM? TELL WHY ON THE LINES BELOW. BE SURE TO GIVE GOOD REASONS FOR YOUR CHOICE.

Basis of the scale: expression and substantiation of opinion; relationship to poem.

Percent			
Gr.4	Gr.7	Rating	Description
0.3	7.3	6	As #5 but extends discussion to (a) give additional reasons/criteria, or (b) develops and elaborates reasons(s) to display relatively high level of sophistication (e.g., "It is told from the mouse's point of view, so I could put myself in the mouse's position and get a sense of what starving animals feel like. It gave me something to think about.").
1.7	15.3	5	Gives one reason or criteria which is related to the text and goes beyond a simple re-statement of topic (e.g., "It gave me a sense of what starving animals feel like;" "It has some nice rhyming in the middle;" "The way the author described the moonlight.").
		5	DESIRABLE
9.2	14.0	4	Gives two or more vague or unelaborated criteria. (Essentially longer "3'"s).
27.8	30.0	3	Gives one reason or criterion which demonstrates some relationship with the poem, but is vague or relies on re-telling of the story. (e.g., "I like mice;" "It's talking about a mouse searching for food at night;" "It tells you the truth".).
		3	MINIMALLY ACCEPTABLE
53.2	30.1	2	Broad sweeping generalization or opinion offered without support. No specific reference to text --could apply to almost any story or poem. (e.g., "It was...interesting, exciting, boring..."). Typically use broad, general adjectives.
7.2	1.6	1	Irrelevant or incomprehensible. Does not address the question.
0.7	1.4	0	No response

Mean rating: grade 4 = 2.44
grade 7 = 3.28

Interrater reliability: grade 4 = .84
grade 7 = .90

Figure 5.1 Rating scale and response distributions for grade 4 and 7: personal evaluation of a poem

Where grade 4 students did provide substantiation for their opinions, responses were evenly distributed over four categories. Grade 7 students, however, were most likely to discuss the poem in terms of theme or interpretation.

Teachers who scored grades 4 and 7 papers expressed disappointment with results for this item. Many more students, they felt, should be able to provide at least one reason to support their personal evaluation of material they read. Markers noted that most students apparently have had little experience in answering such items.

5.4.2 Grade 7

Grade 7 students, in addition to discussing their personal responses to the poem described in the previous section, were asked to interpret two lines of the poem; 72% offered a "minimally acceptable" interpretation.

In addition to the poem and the informative passage described above, grade 7 students read two literary narrative passages and a personal essay which dealt with adverse effects of competitiveness in children's sports. Students were asked to indicate whether on not the essay presentation was fair and accurate, and to substantiate their opinions. Seventy-eight percent of responses reached the "minimally acceptable" level, providing at least one relevant piece of evidence; 55% of responses reached the "desirable" level, where opinions were elaborated through examples or analyses of the text.

Three items accompanied an excerpt from Morley Callaghan's short story "Luke Baldwin's Vow." Students were asked to infer motivation of a central character, to predict the story's outcome, and to substantiate their decisions about whether or not they would like to read the balance of the story. As shown in Table 5.1, 81% were able to infer motivation, 68% to predict the outcome, and 79% to substantiate their evaluation. Typically, responses which failed to reach the "minimally acceptable" level consisted of only sweeping generalizations, in spite of the fact that students were explicitly directed to provide reasons. These responses may reflect weaknesses in reading directions, dealing with questions, or producing a written response. While scoring was based exclusively on content, it is clear that students with limited vocabularies or writing skills could not provide high levels of response.

The second narrative passage,"Somebody's Son" appeared on both grade 7 and grade 10 Q-forms. At both grades, students were asked to describe the personality of the main character, and to indicate the author's attitude toward the character. Figure 5.2 provides the item, rating scale, and response distributions for the first of these questions. At grade 7, 74% of responses were "minimally acceptable," compared with 77% at grade 10. While Figure 5.2 shows a greater difference in percent of "desirable" responses--33% at grade 10, compared with 21% at grade 7--the stability in the percent of unacceptable responses is distressing. Twenty-six percent of grade 7 students failed to provide an acceptable response; at the end of the junior secondary grades, where the study of literature is intensified, 23% of students failed to reach the "acceptable" level. It should be noted that many students provided outstanding responses, and the effects of instruction were clear--that is, many students clearly demonstrated a learned strategy for dealing with character. Others--a disturbing number at grade 10--displayed no systematic approach.

Q. WHAT KIND OF A PERSON WAS DAVID? WHAT WAS IT ABOUT THE STORY THAT LED YOU TO DESCRIBE DAVID THE WAY YOU DID?

Basis of the scale: Identification of appropriate character trait; degree substantiation with reference to text. Note that question explicitly requires reference to text ("What was it about the story ...").

Percent			
Gr.7	Gr.10	Rating	Description
4.4	6.2	5	Attempts to portray more than one dimension of character in a logical and coherent fashion. Evidence is clearly related to the story. (eg., "David is independent, mature and considerate. He shows his independence when.... You can tell he is mature because.... He is considerate to his mother when he....").
17.5	26.5	4	One of more character traits are identified with two or more pieces of evidence clearly related to the story. Presentation is clear and logical, but focuses exclusively on one aspect of character.
----------	----------	-----4-----	------------DESIRABLE------------
52.4	43.9	3	One or more character traits are identified and one or two reasons or pieces of relevant evidence are given. Relationship to text may require some inference on the part of the rater.
----------	----------	-----3-----	--------MINIMALLY ACCEPTABLE--------
22.4	21.9	2	Character trait(s) identified without substantiation from text. May omit evidence entirely, or offer circular evidence, vague reasons, misinterpretation of the text or an unsubstantiated opinion.
3.3	1.7	1	Does not identify character trait.
0.0	0.0	0	No response

Mean scale point: grade 7 = 2.97
grade 10= 3.14

Interrater reliability = .86

Figure 5.2 Rating scale and response distributions for grades 7 and 10: makes inferences about character in a narrative passage.

The second item, which involved the author's attitude or intent toward the main character, was expected to be extremely difficult for grade 7 students; the fact that 65% provided an acceptable response is encouraging. By grade 10, it was anticipated that students would be more accustomed to dealing with such questions; 76% provided an acceptable response.

5.4.3 Grade 10

For the story "Somebody's Son," described above, grade 10 students were asked to offer and substantiate a personal evaluation: 77% were able to provide at least a "minimally acceptable" response. Again, unacceptable responses tended to consist of only sweeping, unsubstantiated generalizations.

Two items appeared with Raymond Souster's poem "The Roller Coaster." Students were asked to describe the narrator's reaction, and to offer a personal evaluation. A large proportion of responses were unacceptable. Many students either failed to attempt the first question (9%) or provided an irrelevant response (8%). These students may have been confused by the term "narrator." A further 25% of students provided responses which were clearly at variance with the poem: their interpretation was seriously flawed. In the case of the personal evaluation, it was discouraging to find that 34% of grade 10 students regarded adjectives such as "boring," "neat," "good," or "interesting" as sufficient support for their judgements. The teachers who marked this item noted a virtual absence of literary terminology, and predicted that a large proportion of students will encounter serious difficulty with the demands of senior English courses.

The grade 10 informative passage dealt with measurement of earthquakes. Students were asked to complete a chart comparing the Mercalli and Richter scales; 86% provided acceptable responses. One of the most frequent student errors involved misinterpretation of the Roman numeral, XII.

The final passage at grade 10 was a personal essay, "Wild Horses" by Paul St. Pierre (see Figure 3.4). Students were asked, first, to list the arguments presented for and against preservation of wild horse bands; and then, to infer the author's position, and to substantiate their inferences. Figure 5.3 gives the wording, the rating scale, and the response distribution for the last item. As shown in Table 5.1, 67% provided minimally acceptable lists of arguments for, and against; only 34% were able to substantiate their perceptions of the author's point-of-view. Markers noted that students had difficulty reading instructions, providing specific references to the text, focusing responses, and maintaining objectivity. On a positive note, some responses were judged to be exceptional. The weak performance of grade 10 students on this item suggests that the concern regarding critical comprehension skills, which was noted in Chapter 3, is well-founded. Many grade 10 students do not deal effectively with tasks calling for critical or evaluative analysis.

5.5 Associations Among Open-Ended Items and Background Variables

At each grade, correlational analyses were undertaken to examine associations among student scores on the various open-ended items. Factor analyses, detailed in the General Report suggested that performance at grade 4 is more strongly affected by variations in stimulus passages than by variations

Q. THE AUTHOR OF THIS PASSAGE EXPRESSES SYMPATHY WITH BOTH SIDES OF THE ARGUMENT ABOUT WILD HORSES. DO YOU FEEL HE IS MORE SYMPATHETIC TO ONE SIDE? EXPLAIN WHY YOU CHOSE YOUR ANSWER.

Basis of the Scale: degree of substantiation; consistency with text; objectivity. Support for any of the answers to question 13 is acceptable.

Percent	Rating	Description
11.0	4	Provides an elaborated argument to support choice. May offer two or more examples of one feature of the text or identify several different features which indicate the author's bias. For example, may provide several examples of word choice; may discuss both quantity and quality of the arguments presented; may refer to both explicit and implicit features. (e.g., "He says the issue is still open to debate, and he presents both sides fairly. He shows appreciation for the beauty of the wild horses and talks about his 'good fortune' in seeing them, but he does not criticize the ranchers. He has an objective tone, and concludes by saying he is open to argument.")

------------4------------------DESIRABLE-------------------------------------

22.9	3	Provides at least one piece of evidence--clearly related to the text--which demonstrated author's point of view. May refer to quantity of argument, tone, selection of material, etc. ("He describes them in a majestic way;" "He states clearly at the end that he hasn't made a decision.")

------------3------------------MINIMALLY ACCEPTABLE----------------------

39.0	2	Vague or unelaborated substantiation. May include some inaccuracies in interpretation or serious departures from the text. (e.g., "He doesn't give an opinion;" "He sounds like he would rather save them.")
15.5	1	Does not address the question. May simply re-state answer to question 13 without elaboration, or offer personal conclusion without reference to the text. (e.g., "He is more sympathetic to preserving the horses;" or "I think they should be saved.")
11.7	0	No response

Mean scale point = 2.06 Interrater reliability = .90

Figure 5.3 Rating scale and response distribution for grade 10: infers author's point-of-view for a personal essay.

in the objective measured or the response format. At grade 7, student performance appears most affected by the level of comprehension required; at grade 10, by both level of comprehension, and length of response required.

Relationships between student background characteristics and performance on the Q-form items were examined using analyses of variance. Details of these may be found in the General Report; highlights are presented below.

At grade 4, there were few significant differences between the performance of girls and boys. Students who reported attending learning assistance had greater difficulty with questions related to the informative passage, but not with the poem or narrative. Amount of leisure reading was positively associated with performance on most items; preferred leisure activity, with items associated with the informative passage.

At grade 7, a number of significant differences appeared for gender, learning assistance, ESL placement, amount of television watched, amount of leisure reading, and preferred leisure reading. All differences were in the expected direction. Of particular interest were strong associations between number of books in the home and performance on items associated with the informative passage; and, negative associations between amount of TV watched and ability to make/substantiate inferences about character.

At grade 10, there were few significant differences associated with gender; these typically involved critical/evaluative skills. Generally, students who attend learning assistance performed relatively poorly, as did those with few books in their homes, those who reported little leisure reading, and those who plan to enter the workforce directly following high school. Students who reported extensive involvement in leisure reading, and those who planned to attend university, performed particularly well. Again, the association between amount of television watched and ability to substantiate inferences about character was negative.

5.6 Summary

Results of the open-ended questions make an important contribution to the 1984 Reading Assessment. Overall, they provide confirmation of the findings reported in Chapter 3: students at all grade levels demonstrate relatively high levels of literal comprehension and of skill in organizing factual material. Levels of inferential comprehension are generally satisfactory; however, many students are unable to substantiate their inferences. Levels of critical comprehension are of some concern, particularly at grade 10 where few students demonstrated systematic strategies for evaluating materials. Finally, performance on items associated with poetry was relatively weak. This result, combined with data reported in Chapter 4 which indicated that many students do not encounter poetry in their classes, suggests that the reading of poetry for understanding and appreciation must be emphasized, particularly in intermediate and junior secondary grades.

CHAPTER 6

ASSOCIATIONS AMONG BACKGROUND, ACHIEVEMENT, AND AFFECTIVE VARIABLES

6.1 Overview

This chapter briefly describes associations among achievement and affective outcomes, and presents selected results for subpopulations of students as defined by their responses to the background questionnaire. Associations involving the open-ended questions were described earlier in Chapters 4 and 5. A more detailed discussion of associations may be found in Chapter 6 of the General Report. Results reported here are based on a random sample of 2932 responses at grade 4, 2860 at grade 7, and 2926 at grade 10.

6.2 Associations Among Achievement and Affective Outcomes

At each grade level, intercorrelations among achievement survey domain scores were examined, along with correlations between achievement scores and the affective scales. At grade 4, correlations among domain scores ranged from .55 to .67; at grade 7, from .49 to .60; and at grade 10, from .42 to .69. At all grade levels, associations among the comprehension domains were strongest, typically exceeding .60.

Scores for the Estes Reading Attitude Scale (ERAS) were significantly and positively associated with achievement for all domains at all grade levels, ranging from .26 (Domain 5 at grades 7 and 10) to .43 (Domain 2 at grade 4). Overall, associations between attitude and achievement were strongest at grade 4, where the correlation between total achievement score and ERAS scores reached .47. The analogous correlation at grade 10 was .42; at grade 7, .37. These results are similar to those reported for the 1980 assessment, although the 1984 data show greater differences among grade levels.

Associations between the four Value of Reading (VRS) subscales and achievement were also examined. At grade 4, three of the four subscales were positively associated with total achievement scores, with correlations between .15 and .21. Students who indicated high values for reading to obtain information, to enhance achievement and to derive enjoyment, attained higher achievement scores. At grades 7 and 10, only reading to derive enjoyment was positively associated with achievement, with correlation coefficients of .18 at grade 7, and .25 at grade 10.

6.3 Associations between Background Variables and Achievement

Tables 6.1 and 6.2 present mean total achievement scores for selected subpopulations. Typically, the pattern of results for domain-level scores mirrored those for total scores; exceptions are described in Chapter 6 of the General Report, along with details of the statistical analyses.

Data displayed in Table 6.1 summarize differences among students according to selected background characteristics. Entries are mean total scores, expressed as percentages. Mean scores for the total sample at each grade level are given in the first line of the table; associated standard deviations appear in a footnote. It is important to keep in mind that comparisons of mean percent correct across grade levels are inappropriate, in view of variations in content and difficulty level.

Examination of Table 6.1 indicates that girls enjoy a slight advantage at each grade level; although the differences according to gender are modest, they are statistically significant. Students who speak English as a second language performed below the mean at all grade levels; differences are greater for those who do not now speak English at home. Students who reported attending learning assistance achieved scores both significantly, and substantially, below the mean; the difference is greatest at grades 4 and 7.

Home environment is strongly associated with achievement: at all grades, students who report few books in their homes received scores substantially below the mean. The differences appear to be magnified by increasing grade levels. At grade 10, for example, students who reported fewer than 25 books performed, on average, nearly one standard deviation below the mean. In fact, they achieved the lowest mean score of any grade 10 subgroup. Level of parents' education was also strongly associated with performance at grade 10. Students whose parents did not complete high school scored significantly below the mean; those whose parents completed some postsecondary training were above the mean.

Table 6.2 presents mean achievement scores according to selected leisure behaviour characteristics, using the same format as Table 6.1. At all grade levels, students who reported low levels of involvement in reading--no time spent reading on the previous day; no library books borrowed in the previous month; reading a book the least desirable leisure activity--received relatively low achievement scores, as did those who reported at least four hours of television watching. Conversely, those who spent more than 1/2 hour reading, who borrowed more than six library books, and who reported reading a book as their most likely leisure activity achieved substantially higher scores.

When most and least likely leisure activities were examined, some unanticipated findings emerged. At grade 4, students who said they were most likely to read magazines, given several hours of free time, received the lowest achievement scores; at grade 7, analogous scores were still significantly below the mean, although the magnitude of the difference was less; and, at grade 10, scores were not significantly different from the mean. Further, at all grades, students who indicated magazine reading as their least likely leisure activity achieved relatively high scores. Grades 7 and 10 students who indicated that they were most likely to go to a movie achieved the lowest scores of all groups. As well, at all grade levels, those who reported that they were least likely to use leisure time to attend a movie achieved the highest scores. Given the increasing availability of movies in the home, this association is worthy of further investigation.

Table 6.1
Summary: Achievement Scores According to Selected Background Characteristics

Subgroup		Mean Percent Correct	
	Grade 4	Grade 7	Grade 10
Total sample*	72.23	73.13	68.73
Gender: Female	73.15	74.65	69.88
Male	71.20	71.68	67.60
English first language: Yes	72.78	73.80	69.85
No	68.48	69.03	64.00
Home language: English	72.88	73.73	69.35
Other	65.80	66.28	60.68
Attends learning assistance: Yes	59.15	58.45	59.15
No	76.75	75.10	70.05
Books in home: <25	63.33	58.58	52.10
25-99	69.43	69.38	64.45
100-249	73.60	73.83	69.48
250-499	75.48	75.93	71.76
500+	73.58	76.40	72.53
Father:** did not complete high school			64.65
completed high school			67.25
technical/vocational education			72.25
some university			71.28
university degree			74.50
Postsecondary plans: University			77.05
Other education			65.74
Undecided			65.05
Workforce			54.61

* Standard deviation for total sample: Grade 4 = 18.84%; Grade 7 = 17.32%; Grade 10 = 17.98%.

** Results by mother's education are virtually coincidental.

Table 6.2
Summary: Achievement Scores According to Selected Leisure Behaviour Characteristics

Subgroup		Mean Percent Correct		
		Grade 4	Grade 7	Grade 10
Total sample*		72.23	73.13	68.73
Reading yesterday:	none	67.48	67.45	63.70
	<1/2 h	72.38	71.83	67.53
	1/2 - 1 h	75.53	75.15	70.60
	1+ h	76.88	78.58	75.23
Library books last month:	none	64.15	68.73	65.70
	1-2	67.28	70.40	68.45
	3-5	73.10	71.98	70.40
	6+	74.15	76.08	73.55
TV yesterday:	none	73.53	75.13	70.93
	<1 h	72.55	74.38	71.35
	1 h	73.88	74.98	69.83
	2 h	73.48	74.78	68.65
	3 h	72.08	72.63	67.05
	4+ h	69.15	68.88	65.43
Most desirable:	Book/story	78.65	80.83	75.30
	Game/sport	73.28	72.60	68.93
	Television	69.48	71.60	66.40
	Movie	68.30	67.90	63.40
	Magazine	66.32	71.15	68.65
Least desirable:	Magazine	74.40	75.00	71.42
	Movie	76.05	77.85	72.68
	Television	71.48	70.50	70.53
	Game/sport	65.53	69.70	67.55
	Book/story	67.43	67.80	64.18

* Standard deviation for total sample: Grade 4 = 18.84%; Grade 7 = 17.32%; Grade 10 = 17.98%.

6.4 Associations between Background Variables and the Estes Reading Attitude Scale

Table 6.3 summarizes associations between selected background variables and scores on the Estes Reading Attitude Survey. Results are based on samples of 968, 952, and 991 student responses at grades 4, 7, and 10, respectively, and are shown as mean raw scores with a range of 15 (extremely negative) to 75 (extremely positive) and a midpoint of 45 (neutral). In this table, scores are comparable across grade levels.

Table 6.3
Summary: Estes Reading Attitude Scale Scores for Selected Subgroups of Students

Subgroup		Mean Raw Score		
		Grade 4	Grade 7	Grade 10
Total sample*		55.03	54.61	53.72
Girls only		56.91	56.39	57.09
Boys only		53.22	52.74	50.58
Books in home:	<25	51.49	50.43	41.93
	25-99	52.24	52.24	51.49
	100-249	55.97	55.73	53.62
	250-499	56.53	55.85	55.65
	500+	56.88	56.13	56.88
Attends learning assistance:	Yes	52.03	51.53	51.05
	No	55.70	55.21	54.03
Television yesterday:	none	56.61	56.54	55.77
	< 1 h	56.06	55.58	54.99
	1 h	55.61	55.11	55.80
	2 h	55.44	54.94	54.45
	3 h	53.81	53.76	52.78
	4+ h	53.20	52.28	49.24
Reading yesterday:	none	50.75	50.17	47.35
	<1/2 h	54.77	54.23	52.17
	1/2 - 1 h	57.42	57.16	56.63
	1+ h	61.09	60.66	60.95
Library books last month:	none	52.98	51.80	49.16
	1-2	52.57	52.07	52.01
	3-5	55.55	54.84	56.77
	6+	61.09	55.43	60.76
Postsecondary plans:	University			57.66
	Other education			53.46
	Undecided			51.56
	Workforce			46.14

* Standard deviations: Grade 4 = 9.94; Grade 7 = 10.07; Grade 10 = 10.82.

Overall, girls demonstrated more positive attitudes than did boys. This difference increases substantially between grades 7 and 10: girls' scores increase slightly, while boys' scores decline. Home environment makes a substantial impact on attitude; further, its influence appears to increase with grade level: grade 10 students who reported fewer than 25 books in their homes were the only subgroup whose average score was below the scale midpoint.

Table 6.3 also displays results of the ERAS according to postsecondary plans of grade 10 students: on average those who plan to attend university scored above the mean; those who plan to enter the workforce directly, displayed relatively negative attitudes toward reading.

Overall, results presented in Table 6.3 are not surprising: students who attend learning assistance, who watch extreme amounts of television and who report little leisure reading, typically obtained lower attitude scores. Avid readers received extremely high scores. It is worth noting that language background, which is not reported in Table 6.3, showed a slight association with ERAS scores at grade 4, but not at grade 7 or 10.

6.5 Associations between Background Variables, Perceived Value of Reading, and Reading Enjoyment

A complex pattern of associations between background variables and subscale scores for the Value of Reading Scale (VRS) and the Reading Enjoyment Scale (RES) appeared. These are detailed in Chapter 6 of the General Report. Perhaps of most interest were associations with gender. At all grades, girls reported higher values for reading as a means of understanding self and others; for both girls and boys, these ratings declined with grade level. On the other hand, boys at all grade levels reported higher values for reading as a means of obtaining information; ratings by both genders were stable over grade levels.

Results for the Reading Enjoyment Scales were convergent with those described earlier. At all grades, girls rated their enjoyment of literary materials more highly than did boys; the reverse was true for nonfiction, periodicals and comic books. The difference of greatest magnitude appeared for fiction at grade 10.

6.6 Summary

Overall, results presented here indicate strong associations among achievement, attitude, home environment, and involvement in leisure reading. Typically, the strength of these associations increased with grade level. Language background is associated with achievement, but not attitude; gender differences favour girls at every level. One of the strongest patterns of associations involves postsecondary aspirations. Those who plan to attend university demonstrated relatively high levels of achievement and positive attitudes. On the other hand, those who plan to enter the workforce directly obtained substantially lower achievement scores, and demonstrated much less positive attitudes toward reading than did other students. Apparently, grade 10 students are at least implicitly aware of the reading demands of higher levels of education and, to some extent, their future plans are influenced by their level of reading competence and their attitudes toward reading.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 Overview

This chapter provides a brief overview of results of the 1984 Reading Assessment, along with recommendations derived from these results. Additional suggestions made by teachers who participated in the assessment may be found in Appendix B.

7.2 Achievement Objectives

The achievement surveys occupy a major role in B.C. Assessment programs. In the 1984 Reading Assessment, the traditional multiple-choice surveys were accompanied by a set of open-ended questions. Conclusions and recommendations related to overall student achievement are outlined below.

7.2.1 Conclusions

Interpretation Panels at all grade levels consistently judged performance to be Satisfactory or Very Satisfactory for each achievement domain. Clearly, the current student population is meeting the "widely held expectations" for reading performance. Performance of grade 4 students continues to be particularly encouraging; as the Interpretation Panel noted, the apparent program strengths offer a sound basis for a move toward excellence. Typically, students' difficulties at grade 4 reflected inexperience in dealing with tasks required. Thus, grade 4 students were more likely than their older counterparts to choose "I don't know" even when key words such as "most likely" were provided. Grade 4 students also performed well on open-ended questions, although they had difficulty substantiating their responses to questions dealing with character and with personal evaluation of a poem. These results support the contention of the Interpretation Panel that a continued strong effort be directed toward the development of higher-level comprehension skills.

The grade 7 achievement results, as well, offer only isolated causes for concern. Overall, Interpretation Panelists were encouraged by the results, particularly in the areas of literal comprehension, locating and using information, and understanding words and expressions. Areas of concern included recognition of sequence, and discrimination between fact and opinion. Most grade 7 students also performed relatively well on the open-ended questions; however, like their counterparts at grade 4, many students experienced difficulty in substantiating inferential and evaluative responses. A strong focus on higher-level comprehension skills, and on strategies for dealing with a variety of question formats is clearly indicated.

Overall, the Interpretation Panelists expressed satisfaction with grade 10 achievement results; they were particularly encouraged by student performance in the areas of literal comprehension, inferential comprehension, locating information, and interpreting graphics. The grade 10 results for many of the critical comprehension items, however, were of some concern. Many students are apparently unaware of the intentions of the author, and fail to recognize even rather obvious cues and techniques in persuasive material. This problem was particularly evident in responses to the open-ended questions, where student performance was relatively weak on an item which required that they infer an author's point-of-view, and substantiate their inferences. Grade 10 student performance was also relatively weak on open-ended questions associated with a poem. Given the increasing demands these students must face as they proceed to higher grade levels, it seems imperative that they develop a repertoire of skills which include facility in making critical and evaluative responses.

The analysis of changes in performance level is traditionally a major agenda of the assessment program. In this assessment, a clear basis for comparison existed only at grade 4, where results indicated relative stability in both student performance and Interpretation Panel standards over the past four years.

7.2.2 Recommendations

In the light of the results and conclusions presented above, it is recommended that:

1. Teachers at all grade levels focus attention on inferential and critical reading skills, and that students be required both to make inferences/judgements and to substantiate them;
2. Teachers systematically instruct students in appropriate skills and strategies for dealing with both open-ended and fixed response questions; and
3. The Ministry, in cooperation with local districts, ensure that adequate instructional resources are made available to facilitate (1) and (2) above.

7.3 Attitudes and Behaviour

Affective outcomes were of primary interest at all grades; as well, extensive data were collected to describe student leisure reading habits. Conclusions and recommendations derived from results of the affective scales and background questionnaires are presented below.

7.3.1 Conclusions

Overall, students displayed very positive attitudes toward reading, reported a high level of enjoyment for reading fiction, and assigned high values to reading as a means of acquiring information and enhancing school achievement, particularly in Language Arts/English. There were, however, some disturbing trends in the data: older students were less likely to perceive independent reading as a means of enhancing school achievement; students at all grades assigned relatively low values to reading as a means of understanding one's self or others; grade 4 boys rated comic books as more enjoyable than any other materials, although overall, grade 4 students more often reported reading fiction; and library use declined sharply between grades 7 and 10.

A series of questions about school-related materials were of particular interest, and produced some startling results. Students were asked to rate five types of material, or, where applicable, to indicate that they did not use such material in school. Overall, ratings declined as grade level increased. At all grades, novels received the highest ratings; at grades 4 and 10, they were followed by readers/short stories, and poetry. At grade 7, however, poetry received the lowest rating, following social studies and science. Further, more than 17% of grade 7 students indicated that they did not read poetry in school--far more than the 11% at grade 10, and 8% at grade 4, which are also undesirably high. This may well explain the deficiencies described earlier in grade 10 performance on the open-ended items associated with a poem. Finally, it should be noted that grade 10 social studies textbooks received the most negative rating of any type of material at any grade level.

7.3.2 Recommendations

In the light of results summarized above, it is recommended that:

4. Local school districts, with the assistance of the Ministry of Education, ensure that a range of recreational reading material reflecting student interests and ability, as well as the range of content areas is available to every B.C. student;

5. Further, that teachers of all subject areas, working with librarians or other resource people, systematically draw student attention to publications--particularly recent releases--which fall within that domain content;

6. Secondary school teachers, librarians, and administrators examine patterns of library use, and develop strategies to enhance library use among secondary school students, many of whom were avid library users in elementary school;

7. English/Language Arts teachers maintain an awareness of current popular fiction, nonfiction, and periodicals in order to encourage and to facilitate classroom discussion about student recreational reading;

8. Local districts and schools examine intermediate and junior secondary language arts courses to ensure that a variety of literary genres--including poetry--are represented, and read in every classroom.

7.4 Associations Among Background and Outcome Variables

Results described in the preceding sections relate to the total B.C. school population. Performance of identifiable subgroups of students is also of major interest in developing and maintaining optimal programs. Conclusions and recommendations which derive from the performance of subpopulations are described below.

7.4.1 Conclusions

Although, overall, results indicate that most B.C. students performed well on the tasks presented by this assessment, it should be emphasized that, in every grade, many students were unable to deal effectively with the materials presented. It is important that salient characteristics of these students be identified, in order to facilitate the development and maintenance of compensatory strategies and programs. Generally, students who attained higher performance levels tended to be from homes where English is the dominant language, and where relatively large numbers of books are evident. These students watch less television, spend more time reading, borrow more library books, display more positive attitudes toward reading--particularly as a means of deriving pleasure and enhancing understanding--and are more likely to have high postsecondary aspirations. Girls attained higher achievement levels and displayed more positive attitudes than boys at all grade levels. For achievement, gender differences were most apparent at grade 7, particularly for open-ended items; for attitude, gender differences were greatest at grade 10. At all grade levels, boys displayed greater variation in the types of reading material they preferred. They displayed stronger interest in nonfiction, periodicals, and comic books than did their female counterparts, but less interest in fiction. A greater variety of reading resources--particularly in content areas--may be required to foster increased reading among male students.

Regarding student background, it is discouraging to note that effects of socio-cultural differences increase with grade level. Clearly, schools are currently unable to compensate for the educational handicaps many students face. At all grades, students who have few books in their homes perform poorly when compared to the total population. The differences for both achievement and attitude become dramatic at grade 10. Effects of dominant home language on achievement are also greatest at grade 10, although associations with attitude are negligible.

Finally, reading achievement and reading attitude exert a strong influence on student aspirations. Those students who have, by the end of grade 10, rejected postsecondary education in favour of direct entry to the workforce, have extremely low levels of achievement and of attitude toward reading, when compared with other students.

7.4.2 Recommendations

Given the results and conclusions presented above, it is recommended that:

9. Teachers of all subject areas direct special efforts toward fostering positive attitudes and increased reading among boys in the intermediate and secondary grades. The diversity of reading interests among these students must be recognized; the traditional emphasis on the novel as the basic recreational reading genre may be inappropriate for many of these students who display strong interest in nonfiction and periodicals;

10. Teacher training institutions ensure that pre-service methodology courses in all subject areas include specific instruction related to the recognition of reading problems, the selection of appropriate materials, the development of subject-specific reading skills, and the establishment/extension of supplemental reading materials; and

11. Local districts direct continued attention and resources toward those students who must overcome language, socio-cultural or other special problems in order to develop reading competence.

7.5 The Use of Assessment Results and Resources

The 1984 Reading Assessment is the first to provide school-level results. While many districts expressed keen interest in this innovation, such reports must be used with extreme care. Further, the decision to allow districts to retain the assessment instruments places the Ministry under an obligation to ensure their appropriate use. Finally, results of this assessment are ultimately of greatest relevance to classroom teachers; thus, it is important that their access to the information developed be facilitated.

In view of these concerns, it is recommended that:

12. School-level results be used to identify exemplary reading programs, and that these be analyzed to identify salient characteristics;

13. School-level results be interpreted with reference to known characteristics of the relevant student population, and the relationships between background characteristics and student outcomes which have been described in this report;

14. The Ministry provide guidelines for future district or school use of the 1984 achievement surveys; and

15. Teachers and district personnel be systematically directed to those sections of the General Report which have relevance to their current responsibilities. Districts may be well-advised to reproduce and circulate selected sections of the General Report to appropriate groups of classroom teachers.

7.6 The Specification of Reading Outcomes

The execution of a province-wide assessment is particularly complex in an area, such as reading, which is pervasive across the curriculum. In the process of completing this assessment, a number of areas of concern have arisen regarding organization of current curricula. For example, Language Arts, Science, and Social Studies curricula all include goals and objectives related to reading. Unfortunately, these are not always congruent within a grade level. Further, at the elementary level, the concept of integration is espoused, but not operationally defined. At the secondary level, it seems apparent that differing expectations will be held for students according to which grade 11 and 12 programs they select. Clearly, a curriculum prepared in 1980 cannot address this issue or provide guidance to teachers responsible for preparing these students.

In the light of these observations, it is recommended that:

16. The Ministry of Education review the elementary language arts guide, to ensure that the concept of integration is operationally defined; the nature of student reading experiences is made explicit (in view of the high proportion of students who report that they do not read poetry in school); and the language arts objectives specified in Social Studies and Science curriculum guides are addressed;

17. The Ministry review and revise the scope-and-sequence chart for Secondary English in the light of expections faced by current students across all curriculum areas. Further, if students are to be systematically streamed into alternate English courses in Senior Secondary grades, entry-level competencies required for various grade 11 courses be made explicit; and

18. The Ministry provide resources designed to assist Language Arts and content area teachers in diagnosing student needs and assessing student competence in reading both literary and content area materials.

7.7 Assessment of Student Competence

The following recommendations derive from procedures and results presented throughout this report. Regarding the measurement of student competence in reading, it is recommended that:

19. Reading assessments continue to focus on outcomes--as opposed to enabling skills--through the selection of realistic materials and tasks;

20. The Ministry re-iterate the assessment program schedule and purposes to facilitate planning and effective use of results by districts and schools;

21. The use of "I don't know" as an option on reading surveys be reconsidered in view of the absence of "content" and the need for students to use deductive strategies to obtain meaning;

22. Response formats be varied according to the objectives of primary interest; where these include organization, synthesis, or evaluation of materials, some provision for extended or open-ended responses is required; and

23. Future reading assessments maintain a strong focus on student reading attitudes and behaviours to enable examination of program effects. This information is of particular value to schools which are making sustained efforts to promote positive attitudes and enhance recreational reading.

7.8 Further Research

The following recommendations are directed to those responsible for designing, managing, and executing applied research involving language skills:

It is recommended that:

24. Research attention be directed to the development of student beliefs and perceptions about the value of reading;

25. Research attention be further directed to interactions between stimulus material, and student comprehension; and

26. Data from this assessment be further analyzed to simultaneously examine the effects of student, school, and district characteristics on student achievement and affective outcomes.

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APPENDIX B

Observations and Suggestions from Participants in the 1984 Reading Assessment

OBSERVATIONS AND SUGGESTIONS FROM ASSESSMENT PARTICIPANTS

Over 200 classroom teachers participated in various phases of this assessment. In the course of their activities as advisors, reviewers, interpretation panelists and markers, they have offered a number of insights and suggestions regarding effective reading instruction. These suggestions are presented here under three headings: curriculum and materials; professional development; and classroom instruction. It is important to keep in mind that these suggestions are not formal recommendations: they do not derive directly from the data described in this report. Generally, they are tangential to the results, and evolved as participants discussed broad issues such as: "What characterizes good reading programs?" "How should reading instruction in secondary schools best be organized?" "Why are so many boys 'turned off' reading?" Typically, the suggestions presented below derive from the experiences and observations of the participants.

Curriculum and Materials

Elementary

1. Diversity in the purchase of support materials such as trade books, authorized novels, and recently published supplemental readers should be encouraged.
2. Materials should be selected so as to ensure that opportunities for inferential and critical comprehension are provided.

Secondary

1. Basal reading series are inappropriate for secondary grades, and should not be used in regular English courses.
2. All subject area teachers should be encouraged to use supplemental reading materials, including periodicals and files of current newspaper clippings.
3. Local resource materials, tied to the B.C. curricula should be developed outlining strategies for language across the curriculum.

Professional Development

Elementary

1. Interested teachers might consider working through their districts to develop on-site Summer Institutes focusing on languages arts.

Professional Development (cont'd)

Elementary

2. Efforts should be made to ensure that teachers have the resources and opportunity to maintain and update their knowledge about reading comprehension and its instruction.

Secondary

1. Professional development is essential for many English teachers who are trained and experienced in teaching appreciation for reading, but not in teaching reading skills.

2. Reading courses should be offered to teachers, not to students. Students should receive appropriate subject-specific reading instruction in every secondary course they take.

Classroom Instruction

Elementary

1. Teachers should strive for integration across the language arts.

2. Teachers should continue to focus on the development of higher level comprehension skills beginning--and continuing--with a strong oral component.

3. Teachers should encourage student appreciation of poetry through shared oral reading and discussion.

4. Language arts teachers should emphasize comprehension, appreciation, and verbal communication skills. Artistic projects (illustrations, posters, title pages) should be recognized as valuable extensions of language arts development, rather than as required student outcomes. Such projects should not have an unwarranted influence on evaluation of student reading performance. Teachers should be aware that for many students--particularly boys in intermediate grades--such projects are major sources of frustration and aversion.

Secondary

1. Innovations/improvements in secondary reading are most successful when they are developed and implemented at the school-level.

2. Many schools report outstanding successes with sustained silent reading programs. Schools which have not previously had such a program should consider implementation.

Classroom Instruction (cont'd)

Secondary

3. Recommendations of previous reading assessments regarding the role of content area teachers in developing reading skills should be followed.

4. All teachers should take responsibility for the development of relevant subject-specific vocabulary.

5. Teachers in all subject areas should develop strategies for the development of information retrieval skills.

6. Study skills should be systematically presented, and include strategies for taking examinations and reading test questions.

7. In many classrooms poetry needs more attention with a strong focus on understanding, appreciation, and enjoyment. Teachers should read poetry to students more often.

8. Language arts teachers should continue to emphasize comprehension, appreciation, and verbal communications skills (see Suggestion 4, Elementary above). Students who are inclined to provide visual representation should be encouraged; students who find such activities frustrating should be directed to other forms of communication.

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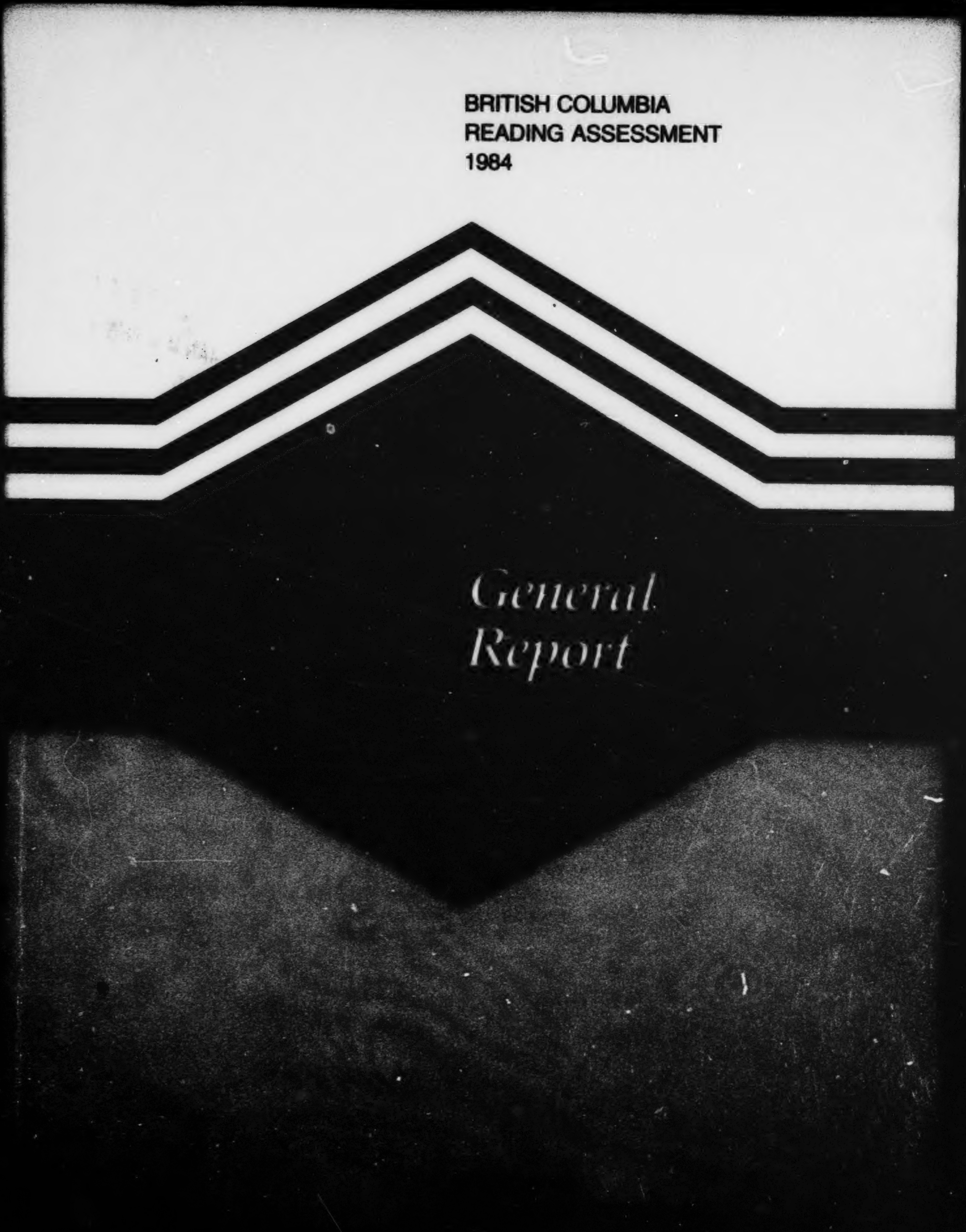

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READING ASSESSMENT
1984

General Report

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THE 1984 B.C. READING ASSESSMENT

GENERAL REPORT

by

Sharon Jeroski
Horizon Research and
Evaluation Affiliates

Submitted to the

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PREFACE

This report provides a detailed analysis of the background, procedures, and results of the 1984 B.C. Reading Assessment, and outlines conclusions and recommendations which derive from the results. Those interested in a less detailed presentation of this material should consult the Summary Report, available from the Learning Assessment Branch.

The 1984 Reading Assessment examined achievement and attitude characteristics of grades 4, 7, and 10 students. Results reported here are based on the responses of more than 98 000 students. Many more students participated in pilot phases of the survey. We would like to express our appreciation to the students who completed the surveys and to the teachers and district staff who administered them.

The design and execution of a large scale assessment depend upon the contributions of many individuals and agencies. We have been fortunate in the high levels of commitment, expertise, and unfailing cooperation of the individuals involved in this assessment. We would like to express our appreciation to all those whose names appear in this report as committee members or as contributors.

We would like to specifically note the contributions of members of the Learning Assessment Branch. Arnold Toutant was instrumental in development of the conceptual design and the selection of materials; David Bateson assisted with technical design; Joyce Matheson provided leadership through all phases of the project; and Kristina Knowles was largely responsible for communication with the field.

We would also like to acknowledge the contributions of the Contract Team members and associates who produced outstanding test materials and assisted with marking, interpretation, and reporting. As well, we would like to express our appreciation to our support staff, particularly our secretary, Catherine Fenn, and our research assistant, Sherry Miyamoto.

We are also grateful for the support we received from the staff at the Educational Research Institute of British Columbia (ERIBC), the technical agency, which assumed responsibility for collection and analyses of the data. We would particularly like to mention the contribution of Carl Bognar, who facilitated every stage of the assessment and provided invaluable assistance in the preparation of this report.

Finally, Catherine Tolsma, of the Contract Team deserves special recognition for the editorial assistance she contributed during the development of this report.

/SJ

THE 1984 READING ASSESSMENT

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HIGHLIGHTS

In May, 1984, over 98 000 British Columbia students participated in the third provincial assessment of reading. Students enrolled in grades 4, 7, and 10 responded to 40-item achievement surveys designed for their respective grade levels, to a background questionnaire, and to one of three attitude scales. As well, a 4% sample of students responded to open-ended items.

Three Interpretation Panels, one at each grade level, met in June to assist with interpretation of the achievement survey results. Through consensus, Panels rated student performance in each domain of interest as: Strong, Very Satisfactory, Satisfactory, Marginally Satisfactory, or Weak.

Regarding overall student achievement levels, the major findings of the assessment included:

- Grade 4 student performance was judged Very Satisfactory for each of the four domains assessed at that grade level: Understands Words and Expressions; Literal Comprehension; Inferential/Critical Comprehension; and Locates/Uses Information.

- Grade 7 student performance was judged to be Very Satisfactory for three domains: Understands Words and Expressions; Literal Comprehension; and Locates/Uses Information. Performance on the remaining two domains--Inferential Comprehension and Critical Comprehension--was rated Satisfactory.

- Grade 10 student performance was rated Very Satisfactory for three domains: Literal Comprehension; Inferential Comprehension; and Locates/Uses Information. Performance on two domains--Understands Words and Expressions and Critical Comprehension--was judged to be Satisfactory.

Extensive data related to student attitudes and leisure reading behaviour were examined. Results indicated that:

- Overall, students displayed relatively positive attitudes toward reading, reported high levels of enjoyment for reading fiction, and assigned high values to reading as a means of acquiring information and enhancing school achievement. A number of differences by gender and grade level were noted.

When data related to the open-ended questions were examined, they revealed that:

- Students at all grade levels displayed relatively high levels of literal comprehension and skill in organizing factual material.

- Most students were able to make appropriate inferences and judgements about the material they read, but at all grades, many students failed to substantiate their responses when required to do so.

Student achievement and attitudes varied according to a number of background characteristics. Strong relationships among achievement, attitude, home environment, and involvement in leisure reading were noted. Differences between boys and girls were striking:

- At all grade levels, girls attained higher achievement levels and displayed more positive attitudes toward reading than did boys.

- Differences between the performance of girls and boys on the achievement surveys was greatest at grade 7. For attitude, gender differences were greatest at grade 10.

- At all grade levels, boys displayed greater variety in the types of reading material which they reported reading and enjoying. They indicated a much stronger interest in nonfiction and periodicals than did girls, but reported less interest in fiction.

Overall, results of the 1984 Reading Assessment indicate a sound, basic reading program in B.C. schools. In order for the program to move toward excellence, some extensions are required along with strategies to deal with some specific areas of concern. The Contract Team presented a series of 26 recommendations directed to the Ministry, to postsecondary institutions, to local districts and schools, to classroom teachers, and to educational researchers. Special attention was directed to a number of areas including:

- An increased focus on inferential and critical reading skills;

- The need for extensive and diverse reading resources in all schools;

- The role of subject area teachers in fostering positive attitudes and increased reading among their students, particularly among boys in the intermediate and secondary grades;

- The importance of ensuring that teacher training in all subject areas include specific instruction dealing with student reading development and subject-specific reading skills;

- The continuing need for attention and resources for those students who must overcome language, socio-cultural, or other special problems in order to become competent readers; and

- The need for practical, easily available instructional and evaluation resources for teachers in all subject areas.

CHAPTER 1

PURPOSES AND ORGANIZATION

1.1 The B.C. Learning Assessment Program

In May, 1984, over 98 000 British Columbia students completed reading achievement and attitude surveys as part of the third provincial assessment of reading. The Provincial Learning Assessment Program, implemented in 1976, is based on the principle that the systematic collection and interpretation of comprehensive, objective information are essential components in the effective management of education. The major purposes of the assessment program are to:

1. Inform professionals and the public of some of the strengths and weaknesses of the public school system;
2. Assist the Ministry, school districts, and schools in decisions related to the development, review, modification, revision, and implementation of existing curricula and supporting instructional resource materials;
3. Assist the Ministry in decisions concerning allocation of resources;
4. Identify areas of need, and provide directions for change in both pre-service and in-service teacher education and professional development;
5. Provide directions for educational research;
6. Monitor student learning over time; and
7. Provide the province, school districts, and schools with information which can be used to maintain strengths and overcome identified weaknesses.

With the 1984 Reading Assessment, the program enters the third cycle of assessment; reading was previously evaluated in 1976/77 and in 1980. Previous assessments have examined student performance in grades 4, 8, and 12, in order to permit generalizations about outcomes of primary, intermediate, and secondary schooling, respectively. A list of previous assessment reports is provided in the References section of this document.

1.2 Context of the 1984 Reading Assessment

The 1984 Reading Assessment was undertaken within an educational context which differed in a number of important ways from that which prevailed during previous reading assessments. Changes, which have had important implications for the design and execution of the assessment, included:

1. The implementation of the grade 12 provincial examination program during the 1983-84 school year;

2. An increasing demand for objective achievement data at the school, as well as district and provincial, levels;

3. Relatively stable curricula, resources, and materials throughout the Language Arts and English programs; and

4. Fiscal limitations and constraints within the public school system reflecting a provincial economy under restraint.

The introduction of grade 12 examinations dictated that the general assessment of grade 12 students be reconsidered. First, the amount of instructional time devoted to provincial testing and assessment activities must be kept to a minimum; further, results of the grade 12 English examination can be used to a limited extent to examine provincial strengths and weaknesses. Consequently, the secondary assessment of reading was scheduled for grade 10--the end of the junior secondary grades--with a concomitant change from grade 8 to grade 7 as the designated intermediate grades outcome level. The primary grades assessment at grade 4 was retained; it was felt that grade 4, in fact, represents the end of primary schooling in many areas, as well as representing the earliest grade level at which many widescale assessment techniques are appropriate.

A 1983 survey of school district superintendents indicated strong support for the provincial assessment program. The most frequently identified limitation of the program--particularly by superintendents of large districts--was that it did not provide school-level results and thus failed to provide specific information which could be used to enhance programs and practices. The Ministry agreed; the 1984 Reading Assessment was thus the first assessment designed to produce school-level results. The decision had a number of implications for the design of the achievement surveys; these are discussed in the second chapter of this report.

Results of the 1976/77 language arts and reading assessment provided vital information for curriculum revision and materials selection. Between the first and second assessments of reading, new curriculum guides appeared for both elementary language arts and secondary English, along with resource books for English 8, 9, and 10. During the same time period, new reading series were authorized and prescribed for use in the elementary grades. The 1980 Reading Assessment examined the impact of these publications through extensive teacher questionnaires, and sought to provide baseline data on student attitude and achievement in the early years of the new programs. Since 1980, curricula and instructional resources for reading have remained relatively stable. Most schools and districts have adhered to the programs implemented four or five years ago. In such cases, grade 4 students have been exposed to a single program or approach since entering school; grade 7 students, for at least the four intermediate grades. Further, in grades 1 through 10, no major changes are imminent. At the same time, the Ministry is placing less emphasis on implementation at the provincial level; it is seen, rather, as a local responsibility. Within the described context, provincial assessment efforts are most logically directed toward student achievement and attitude. Teacher and administrator questionnaires which have high utility in the context of revision and implementation are less important when no major decisions in these areas are contemplated.

The economic climate and fiscal restraint program in B.C. today demands that any expansion of educational services in one area be accompanied by the restriction of services in another. Consequently, with the addition of school-level reporting, the teacher and administrator questionnaires common to previous assessments were omitted from the 1984 reading assessment.

1.3 Objectives of the 1984 Reading Assessment

Within the general goals of the assessment program and the educational context described above, the 1984 assessment of reading was designed to examine the following issues:

1. To what extent are students in grades 4, 7, and 10 achieving the objectives for reading which are specified in the current language arts and content area curriculum guides?
2. To what extent have these levels of achievement and attitude changed when compared to the achievement reported in the 1980 Reading Assessment?
3. What recommendations to enhance student performance can be derived from these data and directed to:
    a. school administrators and teachers;
    b. pre-service and in-service educators;
    c. the Ministry of Education;
    d. school district administrators and resource personnel; and
    e. educational researchers?

1.4 Widescale Assessments of Reading: A Review

Assessment procedures vary widely across North America. As Wormer (1980, p. 3) concludes: "There probably is no typical state-level testing program. They are far too diverse for that." Since its inception in the late 1960's, the National Assessment of Educational Progress (NAEP) model of gathering information about levels of educational achievement has served as a framework, or springboard, for many state and provincial reading assessment programs. Central to the design of each assessment is the underlying purpose of the testing program; this purpose, in turn, is influenced by ever-changing social and educational forces.

Each widescale assessment contributes additional reports to an already voluminous literature concerned with educational assessment. During the planning stages of the 1984 B.C. Reading Assessment, numerous NAEP reports, recent reviews of assessment literature (Froese, 1983; Kauffman, 1979; Wiley, 1979; Wormer, 1981), and reports from forty-one states and provinces were examined (see Reference List B). To identify current practices in assessment design, information from these reports was examined on the following dimensions:

1. stated purpose(s) of the assessment,
2. testing cycle,
3. grade levels or ages tested,
4. specificity of objectives,
5. test development,
6. inclusion of surveys of reading habits or attitudes,
7. collection of student background information, and
8. reporting procedures.

Most assessment programs exist because of government mandates which require testing either as an accountability measure or as a literacy requirement. Stated purposes parallel those two goals: (1) to monitor educational progress; for program evaluation and curriculum improvement; to identify trends; to collect data on educational attainment; to provide information for policy makers; and to identify educational needs; or (2) to test minimum competencies, and to identify students needing remedial help.

The testing cycle and grade levels tested were dependent on the assessment model used--accountability or competency testing. Programs designed to monitor achievement, such as the B.C. Assessment program, usually test students at intervals of two to four years at three grade levels. Competency testing is done annually, typically at four or more grade levels.

Objectives for student reading performance varied both in number--from as few as four to more than fifty--and in specificity--from general student goals or outcomes to explicit behavioural objectives with subobjectives. In common, however, most assessments cluster the objectives into three to five domains. Vocabulary, comprehension, and study skills categories were included in nearly every assessment. Additional domains often resulted from subdividing vocabulary (structural analysis, word attack, phonics) and comprehension (literal, critical, application, literary forms).

Only six of the studies reviewed (British Columbia, Illinois, Indiana, Louisiana, Massachusetts and Utah) reported survey data from students, principals, teachers, parents, or reading specialists. Since valuable information can be obtained from studying the effect of student background characteristics, as well as teacher and school characteristics, it was surprising that so few assessment programs elected to collect this data.

A wide range of reporting practices was observed, both in intended audience and level of reporting. In addition to the standard comprehensive technical report, several states (Alaska, Louisiana and New Jersey) published non-technical reports for public distribution and more specialized reports for legislators. One state, Florida, even published a study guide of test-taking strategies for students. Instructional materials were also developed from some assessments. Results were reported at various levels: school, district, county, and state or provincial.

1.5 Organization of the Assessment

The organizational structure of the 1984 Reading Assessment, shown in Figure 1.1, involved three major groups--the Learning Assessment Branch, a Contract Team and a Technical Agency--and followed procedures established for previous B.C. assessments.

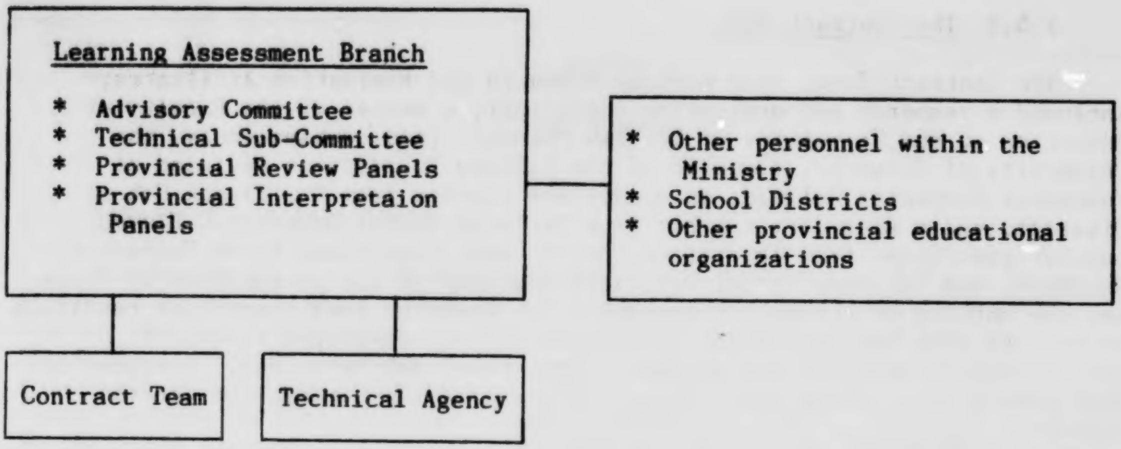
Learning Assessment Branch
* Advisory Committee
* Technical Sub-Committee
* Provincial Review Panels
* Provincial Interpretaion Panels
* Other personnel within the Ministry
* School Districts
* Other provincial educational organizations
Contract Team
Technical Agency

Figure 1.1 Organizational Structure of the 1984 Reading Assessment

1.5.1 The Learning Assessment Branch

The Learning Assessment Branch was responsible for and co-ordinated all activities including communication with Ministry, School District, and other educational organizations. As well, the Assessment Branch convened the following committees and panels:

1. The Advisory Committee--composed of teachers, administrators, teacher educators, a school board trustee, representatives of the Contract Team and Technical Agency, and members of the Learning Assessment Branch--which provided advice and review during development phases, and assisted with Interpretation and Review Panel meetings;
2. The Technical Subcommittee--composed of technical representatives from the Contract Team and Technical Agency and chaired by a technical coordinator from the Learning Assessment Branch--which assumed responsibility for decisions concerning technical and statistical issues;
3. Review Panels--composed of teachers, administrators, and reading specialists--which subjected all potential achievement survey items to evaluative scrutiny; and
4. Interpretation Panels--composed of teachers, administrators, teacher educators, trustees, parents, and representatives of interested and informed groups--which determined acceptable and desirable standards of performance, and evaluated actual student performance in the light of these standards.

1.5.2 The Contract Team

The Contract Team, from Horizon Research and Evaluation Affiliates, included a research and evaluation consultant, a member of the Faculty of Education at the University of British Columbia (and, subsequently, the University of Calgary), a member of the College Foundations Division of Vancouver Community College, an elementary teacher from Chilliwack School District, and a secondary teacher from Richmond School District. Eleven teacher associates from Abbotsford, Burns Lake, Coquitlam, North Vancouver, Richmond, and Smithers School Districts assisted in the preparation of items and the marking of students responses. The Contract Team identified candidate objectives from the provincial curriculum guides, developed tables of specifications based on the Advisory Committees' deliberations, designed all instruments used in the assessment, and prepared the Summary and General Reports.

1.5.3 The Technical Agency

The Educational Research Institute of British Columbia (ERIBC) was responsible for production, distribution, and scoring of all pilot and final forms of the instruments, as well as for analysis of provincial, district, and school results. Members of the Technical Agency attended meetings of both the Technical Subcommittee and the Advisory Committee, prepared materials for the Review and Interpretation Panels, and provided technical, statistical, and psychometric consultation to the Ministry and the Contract Team.

1.6 Organization of the Report

Subsequent chapters of this report are described below:

- Chapter 2 details the procedures followed in designing and administering instruments and in analyzing and interpreting the results.
- Chapter 3 presents achievement survey results for grades 4, 7, and 10, along with Interpretation Panel judgements;
- Chapter 4 describes background characteristics of the students who participated, and outlines results of the affective scales;
- Chapter 5 deals specifically with student performance on the open-ended Form Q at each grade level;
- Chapter 6 deals with associations among student achievement, background variables, and affective characteristics; and
- Chapter 7 summarizes key results, and presents conclusions and recommendations.

A series of appendices include detailed results for each test item.

CHAPTER 2

PROCEDURES

2.1 Nature of the Assessment

Reading is unique among instructional areas assessed in British Columbia: it cannot be adequately defined as a domain of content. Students acquire reading skills, experiences and attitudes; they do not acquire reading knowledge. Further, reading is the most pervasive curricular area and, consequently, the most difficult to delimit. In early primary grades, students learn to read; as they progress through elementary school, they read to learn. As they move through high school they face an increasing demand for a wide array of reading skills and strategies. No widescale assessment program can hope to examine all of the reading competencies students develop and apply. The area to be assessed must be broad enough to permit generalizations about overall reading performance, but at the same time, be carefully circumscribed to provide schools, districts and the Ministry with valid, specific profiles of student attainment which can be used to enhance current instructional programs.

Initial meetings of the Contract Team and Technical Subcommittee focused on definition of the area to be assessed. Four preliminary decisions were reached:

1. The assessment would focus on outcomes as opposed to enabling skills;
2. The assessment would not be restricted to the "Reading" strand of the Language Arts Curricula; rather, relevant objectives from all content areas would be considered;
3. Stimulus materials would be drawn from passages/tasks which were as similar as possible to those currently in use in B.C. schools; and,
4. Student responses would not be restricted to fixed-response or multiple-choice items; some questions would call for students to supply a response.

2.1.1 Reading Outcomes

As Tuinman and Kendall (1980) noted, the selection of reading skills and objectives logically depends upon purpose, curricular context, historical context, and dominant professional views of the audience. The overriding emphasis in the B.C. assessment program is the monitoring of student outcomes. In reading, then, the focus is most logically on outcomes such as word recognition, comprehension and study skills, rather than enabling skills such as phonics and structural analysis which are learned in order to enable students to recognize words and derive meaning from written material. This is not to suggest that decoding skills have no place in student assessment; however, they are more appropriately tested at the classroom level, where the information can be used in determining optimal instruction for individual students and groups of students.

In fact, a 1983 Ministry survey of local assessment and testing practices indicated that such testing is carried out at the local level, with results used to make diagnostic and placement decisions about individual students.

2.1.2 Scope of the Assessment

Curricula devised during the 1970's reflected the growing awareness that reading was a legitimate and vital instructional concern at all grade levels, rather than the exclusive domain of the primary grades. Curriculum guides specified discrete sets of goals and objectives for reading, per se, and assessments tended to be based on a rather narrow view of reading instruction which was discrete from--although it had implications for--other curricular areas such as literature, social studies or science. Thus, the 1980 assessment in B.C. focused on objectives drawn from the "Reading" strand of the language arts curricula.

Recent developments in curricula and resources have attempted to retain a strong emphasis on reading skills, while at the same time espousing integration both within the language arts and across the curriculum. Extant curriculum guides do call for such integration; they do not, however, explain what form it will take or how it is to be accomplished. On the other hand, materials which have appeared recently, or which are currently under development, offer explicit links. The revised social studies and science curricula, for example, describe desirable reading, writing, and study skills outcomes within the broader content area. The English 12 final examinations evaluate student competence in the reading of a literary selection, with both specific literature-related skills, and more general reading comprehension skills tested through presentation of a single literary selection.

This emphasis on integration is reflected in the design of the 1984 assessment. Objectives were drawn from all curriculum areas, and rated in terms of their relative priority for this assessment. The most highly ranked objectives were then organized into domains of interest, with associated amplified objectives which described the nature of eventual test items.

2.1.3 Stimulus Materials

The decision to focus on student outcomes across curriculum areas suggested that realistic reading tasks be selected representing a range of material similar to that which is commonly encountered by students at various grade levels. Potential sources of such material included texts selected but not yet released, such as the new Social Studies materials at grade 4 and the new General Science 10 textbook; anthologies and textbooks aimed at the public school market, but not currently on the prescribed or authorized lists in B.C.; and trade books aimed at school-age and young adult markets.

It was recognized that while the selection of stimulus material must be based on compatability with the domains and objectives of interest, the materials themselves would in turn affect emphasis on various outcomes. Thus, the original specifications and amplified objectives were treated as guidelines rather than as rigid precepts for the development of test materials. Stimulus passages were selected on the basis of appropriate length, interest level, difficulty, and representativeness as well as compatibility with objectives. Questions were then formulated to reflect the students' tasks in obtaining meaning from the passage, and keyed to the original specifications, which were in turn revised to reflect the actual material used. This iterative process results in test materials which realistically portray the reading tasks students encounter. It represents a compromise between the traditional objectives-based test construction process, and the appealing materials-based process, which requires extensive task-analysis, and was beyond the time and fiscal constraints of the current assessment.

2.1.4 Response-mode

Previous B.C. assessments of reading have relied exclusively on multiple-choice items which combine relatively broad sampling of material within the testing time allowed with ease of scoring, and at the same time avoid contamination of results by variability in students' productive language skills. While the multiple-choice format is the single most effective and widely used technique for widescale assessment, it prevents consideration of many important objectives, and causes others to be measured in artificial and unnatural ways. Perhaps more importantly, it presents the implicit message that the Ministry and associated agencies believe that objectives which are amenable to fixed-response are the most--or, indeed, the only--important objectives, or, alternately, that it is not possible to measure reading skills validly using any other procedure. Both beliefs are mistaken: many important objectives are best measured using an open-ended response format; valid and reliable procedures are available. Open-ended response formats are required whenever student ability to respond, to substantiate, to organize, or to integrate is of interest. Clearly, many important objectives for reading literature and for applying study and research skills require such response modes.

It was determined that the 1984 Reading Assessment would solicit open-ended responses to selected stimulus materials from a 4% provincial sample of students, typically one student per classroom.

2.2 Development of the Achievement Surveys

Student achievement surveys were developed for each of grades 4, 7, and 10, using the guidelines described in the first section of this chapter.

2.2.1 Domains and Objectives

Initial meetings of the Contract Team, Technical Subcommittee and Advisory Committee established the achievement domains and objectives or outcomes to be assessed, using the following procedures:

1. Reading and study skills objectives from the B.C. Language Arts, Social Studies, and Science Curriculum Guides were identified;
2. These specific objectives were assigned ratings of relative importance at each of grades 4, 7, and 10 by the Advisory Committee;

3. The most highly rated objectives at each grade level were organized into broad categories or domains;

4. Within domain, objectives were assigned to one of three or four categories which were then designated "objectives" for purposes of the assessment;

5. The original specific objectives were used to amplify the assessment objectives;

6. A Table of Specifications for 120 items was prepared for each grade level with the number of items in each domain and for each assessment objective reflecting the ratings of the Advisory Committee and the number of associated amplified objectives; and

7. The Table of Specifications was subsequently revised to permit development of three parallel forms of the survey at each grade level. (A late decision to provide school-level reports required parallel construction in terms of domain and difficulty level; within domain, it was not feasible to maintain this parallelism for objectives.)

The Advisory Committee assigned highest ratings to objectives which dealt with understanding words, comprehending text and applying research or study skills. At all grade levels, the largest group of these objectives dealt with text comprehension; in fact, the number and diversity of these objectives suggested that they be treated as two or three separate domains. Historical context and the organization of the B.C. Language Arts curricula argued for use of the traditional literal/inferential/critical categories. The five domains of interest for the 1984 assessment are described below:

1. Understanding words and expressions: recognizing high frequency words, obtaining meaning of low frequency or multiple-meaning words from context, and understanding figurative language;

2. Literal comprehension: understanding explicitly stated information; little analysis, translation or evaluation is required;

3. Interential comprehension: inferring meaning through reorganization, translation, generalization, recognizing and interpreting relationships;

4. Critical comprehension: evaluating both explicit and implicit material in such terms as purpose, source bias, validity, relevance and technique; and

5. Study and research skills: using standard reference sources and book formats, locating and classifying information, and interpreting non-prose materials such as pictures, maps, graphs and charts.

These descriptions are congruent with--and in some cases, identical to--those presented by Tuinman and Kendall (1980) in describing the domains assessed in 1980.

Table 2.1 shows the domains and objectives assessed and the number of associated items at each grade level. The Advisory Committee assigned highest priority to skills associated with literal understanding of words and connected discourse, with interpreting pictoral information, and with using standard reference formats for the grade 4 achievement surveys. The Committee suggested increased emphasis on inferential comprehension at grade 7, and on critical comprehension at grade 10.

2.2.2 Stimulus Materials

The nature and difficulty of reading achievement items are determined as much by the reading passages as by the items. The Advisory Committee, in rating objectives to be assessed, also indicated relative importance of dealing with:

1. literary materials, such as poetry, stories, and personal essays;
2. content area materials from science and social studies;
3. reference materials, such as dictionaries, encyclopaedia, and card catalogues, and
4. functional materials, such as students encounter outside of school.

Material intended for young children is relatively easy to categorize in this way. More sophisticated writing defies such simplistic classification; a single passage may be variously assigned to any of the categories depending upon the purpose for which it is being read. Thus, any attempt to impose a rigid allocation system for the reading passages was inappropriate; rather, Advisory Committee ratings were used as general guidelines for selecting stimulus materials.

Potential stimulus passages were sought from a number of sources, which included:

1. Textbooks and anthologies intended for use at the grade levels concerned, but not currently prescribed or authorized in B.C. Many of these are recent series for which publishers are seeking provincial authorization;
2. Manuscripts and galley proofs of textbooks--commissioned by the Ministry--which will appear on future authorized and prescribed lists;
3. Current Canadian trade books, identified and recommended by the Canadian Book Information Centre;
4. Current trade books from local publishers such as Douglas & McIntyre;

Table 2.1
Table of Specifications: 1984 Reading Assessment

Domain/Objective	Number of Items per Grade		
	4	7	10
1. Understanding words and expressions			
- high frequency words	9	9	-
- using context clues	6	9	9
- multiple meanings	9	6	6
- structural analysis[a]	6	-	-
- figurative language	-	-	6
Domain 1 Total	30	24	21
2. Literal comprehension			
- main or central ideas	9	3	7
- sequence	4	2	-
- relationships	6	11	11
- relevant information	11	8	3
Domain 2 Total	30	24	21
3. Inferential comprehension			
- main or central ideas	4	10	6
- generalizations	12	10	11
- relationships	5	7	7
Domain 3 Total	21	27	24
4. Critical comprehension			
- recognizing purpose/source	4	6	19
- evaluating information	2	9	11
Domain 4 Total	6	15	30
5. Locating and using information			
- locating print information	12	9	12
- using print information and references	9	9	-
- interpreting pictures	12	-	-
- interpreting maps	-	12	-
- interpreting graphs and tables	-	-	12
Domain 5 Total	33	30	24
Total Test Items	120	120	120

---

[a] Structural analyses, included to permit estimation of change from 1980 to 1984, has been arbitrarily assigned to Domain 1 for this assessment.

5. Other wide-scale assessment programs such as the Ontario Assessment Packages, and the NAEP released exercises;

6. Children's magazines, such as National Geographic World;

7. Local newspapers; and,

8. Public libraries.

For each grade level, a collection of potential materials was assembled. Item writers then elected passages from these collections in developing the achievement surveys. Additional materials were identified as required.

The general content dimensions--in terms of reading passages--of the final achievement surveys are shown in Table 2.2. For the purposes of this table, each piece of stimulus material has been assigned to a single category. Where a passage fit more than one classification, the literary and science/social science categories were given preferred status. Thus, at grade 4, a glossary of science terms was assigned to science/social science-textbook parts, rather than to reference-dictionary; similarly, pictures of pioneer life at grade 4, and road maps at grade 7 were designated science/social science-graphic, rather than functional. Excerpts from newspaper editorials and columns were designated literary-personal essay, while newspaper and magazine articles appear as science/social science-content, rather than functional.

2.2.3 Development of Items

Following development of test specifications and a pool of potential stimulus materials, achievement items for pilot testing were prepared, reviewed and revised in the following series of activities:

1. Sample items for the range of amplified objectives were prepared by the Contract Team and reviewed by the Learning Assessment Branch;

2. Contract Team Associates--teachers with extensive experience and current responsibilities at the grade levels of interest--attended a week-long item-writing workshop, where they selected stimulus passages and prepared items to specifications given. At the same time, Contract Team members prepared additional items;

3. The Contract Team reviewed items, edited and revised as required, and deleted those of inappropriate content or difficulty-level;

4. Items were presented to the Technical Subcommittee for selection and editing;

5. The Advisory Committee met to review items and passages;

6. Review Panels examined materials, commented on objective-item congruence, rated passages for appropriateness, difficulty-level and interest-level, and judged items to be essential, satisfactory, or not useful;

7. Based on the Review Panel comments, items were revised, some passage/item sets were deleted, and--in the case of grade 10--additional passages/items were prepared. These were then reviewed by the Technical Subcommittee and assigned to pilot testing; and,

8. Finally, items which could be used at more than one grade-level were identified and added where appropriate.

Table 2.2
Classification of Stimulus Material

	N of Passages[a]			N of Items		
Passage Type	4	7	10	4	7	10
Single sentence		n/a		30	21	15
Literary:						
poetry	3	3	3	12	10	13
narrative/descriptive	4	3	3	23	17	14
personal essay	-	2	5	-	11	25
Science and Social Science						
informative	3	7	5	14	31	29
graphic/tabular	3	3	3	12	12	12
textbook parts (table of contents; glossary)	2	1	2	7	3	8
outlines	-	2	-	-	6	-
Functional						
newspaper	1	-	-	4	-	-
personal formats	1	-	-	3	-	-
standard formats (menu, notices)	3	-	-	11	-	-
Reference						
dictionary	-	3	-	-	9	-
encyclopaedia	-	-	1	-	-	4
library	1	-	-	4	-	-

[a] Note that the number of passages is calculated as the number of times passages of that type appear, rather than as the number of unique passages.

This process--summarized in Table 2.3--yielded close to 1000 items for the pilot tests. It is important to note that reading achievement with its associated passage-dependence causes unique problems in test development: reviewers must consider not only the individual items, but also, the passages presented. When a passage is rejected, its associated items--regardless of their individual quality--are deleted. Consequently, those responsible for test development must, at all stages, provide many more item/passage sets than will eventually be required. In the current assessment, individual items were rarely rejected; however, consensus regarding quality and appropriateness of passages was rare, particularly when grade 10 materials were considered. Passages were simultaneously rated too easy/too difficult, or high interest/low interest, or essential/inappropriate by different reviewers. Review Panels for grade 10 were concerned, as well, with quality of expression; consequently, a number of newspaper and content area selections were revised or deleted.

Table 2.3
Summary: Achievement Item History

	Passages/Items		
Status	Grade 4	Grade 7	Grade 10
Developed by item writers & Contract Team	51/486	39/447	35/551
Deleted by Contract Team and Technical Advisory Committee	10/110	6/92	6/189
Deleted Following Review Panels	9/82	3/48	7/145
Added to Review Panels specifications	0/0	0/0	14/113
Added for cross-grade comparisons	1/4	5/35	3/17
Pilot Tested	33/298	35/342	39/347

2.2.4 Pilot Testing

Pilot test achievement forms were assembled following the revisions described above. Each form consisted of 40 items: eight forms were assembled at grade 4; nine forms at each of grades 7 and 10.

During the second week in October, over 2500 students participated in pilot testing, with approximately 100 students completing each form of the surveys. Because all grade 4, 7, and 10 classes in B.C. were required to respond to the final forms in May, 1984, the pilot test sample was drawn from grades 5, 8, and 11. The sample included 111 classes in 22 school districts.

At each grade level, the various forms of the pilot test were interleafed and assembled into class sets; thus, in most classrooms, all eight or nine forms were represented. Students recorded their responses on machine-readable answer sheets while each teacher involved reviewed one of the pilot forms on a specially marked copy. Teachers were instructed to time actual student completion, and to indicate the number of students who had finished the survey after 40 minutes. Upon completion of the survey, students were asked to indicate the stimulus materials which they found most and least interesting.

Student responses were analyzed by item, domain, and form; teacher and student comments were collated. As well, Contract Team and Assessment Branch observers submitted reports on student and teacher response in a number of classrooms at each grade level.

Results of the pilot tests indicated that:

1. At all grade levels, students required approximately 35 minutes to complete the 40 achievement items;

2. Few students--typically less than 4 percent--exercised option E, "I don't know;"

3. At all grade levels and on all forms, item sets displayed high internal consistency;

4. Virtually all items met statistical criteria for inclusion in the final forms;

5. At grades 8 and 11, students preferred the literary narrative and the poetry selections; they disliked informative material from science and social science except for passages about animals;

6. Grade 5 students showed more diversity in selecting their favourite selections: a play, some of the poetry, literary narratives, natural science material and some functional selections were frequently chosen. Social science selections, some poems, and standard references--dictionary, library card, Table of Contents--were most often designated "least liked;"

7. Teacher response to the materials was generally positive; many teachers provided perceptive comments which were used to revise individual items. It is worth noting that, again, there was little consensus among grade 11 English teachers regarding the interest level, utility, and difficulty of the stimulus passages. As well, many teachers apparently do not clearly understand the purpose or the nature of wide-scale assessment surveys. The most frequent criticism was that "I don't know" should not be an option; further, a number of senior secondary teachers expressed concern that the materials did not "challenge" their brighter students.

2.2.5 Comparison Items

At each grade level, a number of items were included to permit comparisons of 1984 performance with B.C. student performance in 1980; the performance of American students on the National Assessment surveys in 1980; and, the performance of B.C. students at other grade levels in the current assessment.

The estimation of changes in student performance over time is a major objective of the B.C. Assessment Program. The number of "change" items which could be included in the 1984 assessment was severely restricted by the following factors:

1. Previous assessments involved grades 4, 8, and 12; the current assessment surveyed grades 4, 7, and 10;
2. Passages and items from the 1980 assessment have been widely circulated in B.C. as grade 4 and 7 mandatory achievement tests;
3. Many potential change items--particularly at grade 4--had extremely high percent correct values in 1980; statistical regression toward the mean is likely to obscure true change on such items;
4. A number of statistically appropriate change items were rejected on the logical grounds that they represented objectives given low priority in the current assessment; and,
5. The large proportion of missing data at grades 8 and 12 on the 1980 assessment made interpretation of change at the item-level problematic.

It was determined that single items which had appeared on provincial examinations could be included; reading passages, however, could not. Thus, no change items appeared for the comprehension domain. The number of change items, by domain, is shown in Table 2.4.

While the comparison of B.C. students with their peers in other locales is not a major objective of the assessment program, such comparisons are often of great public interest and provide an additional referent for interpreting results. The most recent National Assessment of Reading in the United States, designed for ages 9, 13, and 17, included a number of stimulus passages and items closely related to the B.C. achievement specifications for 1984. These were included in the review process and in the pilot tests; as shown in Table 2.6, a few such items were included on the final forms at each grade level.

Finally, in order to estimate growth in reading skills from one grade level to another, several items were simultaneously assigned to final forms at two--and in some cases three--grade levels. The number of items selected for cross-grade comparison is shown in Table 2.4.

It should be noted that comparisons of student performance across time, locale, and grade level were not restricted to the achievement survey. As described in a later section, a number of affective items and scales were also selected to permit such comparisons.

Table 2.4
Summary: Comparison Items by Grade Level

Comparison	Number of Items[a] Grade 4	Grade 7	Grade 10
B.C. 1980 Reading Assessment	11	12	6
NAEP 1980	11	4	3
B.C. 1984 Reading Assessment			
Cross-Grade Comparisons			
Grades 4/7/10	2	2	2
Grades 4/7	9	9	-
Grades 7/10	-	8	8

[a] In some cases, items were counted twice. For example, some NAEP items were used at more than one grade level, thus allowing comparisons both with NAEP results and across grade levels.

2.2.7 Assembly of Final Achievement Forms

Following examination of pilot test results, final test forms were assembled. These are shown in Appendices E, F, and G. Within each grade level, three 40-item achievement survey forms were designed to be equivalent with regard to:

1. The number of items per domain;
2. The estimated mean score per domain--and, consequently, total score --based on pilot test results; and,
3. The number and variety of stimulus passages.

Given this equivalence, passages and items were selected to reflect the specifications shown in Tables 2.1 and 2.2. Wherever two or more passages satisfied these criteria, selection was based on student preferences. For example, within a category such as literary narrative, an attempt was made to select the passages students had designated as the most interesting; on the other hand, regardless of student preference, a literary narrative could not be used to replace a content area passage. Following assembly of the final forms, copyright release was sought from appropriate sources; in one case, at grade 10, permission to use a literary excerpt was refused. As a result, some duplication of items across forms was necessary, along with minor adjustments to the stimulus material specifications.

Equivalence across forms was a major concern in this assessment because of the decision to prepare school-level reports. The domain specifications for single forms of the achievement surveys are shown in Table 2.5.

Table 2.5
Specifications for Individual Test Forms

Domain	Number of Items Grade 4	 Grade 7	 Grade 10
1. Words and expressions	10	8	7
2. Literal comprehension	10	8	7
3. Inferential comprehension	7	9	8
4. Critical comprehension	2	5	10
5. Locates and uses information	11	10	8
Total	40	40	40

2.2.8 Open-ended Achievement Forms

At each grade level, a fourth form of the achievement survey was constructed to assess student open-ended responses to selected stimulus materials. This form was designed to permit assessment of objectives where student construction of a response is essential. Such objectives include organization of material, substantiation of a response, and prediction of an outcome.

Each open-ended form contained three multiple-choice questions which replicated those on other forms, along with several open-ended questions calling for responses of varying length and complexity. At each grade level, students were asked to:

- Draw inferences about character traits and substantiate these;
- Express an affective response with substantiation for a literary passage; and,
- Organize factual material from a science passage using a chart-format.

Other objectives were specific to one or two grade levels and included:

- making inferences from pictoral material (grade 4);
- predicting outcomes (grade 4 and 7);
- interpreting lines of poetry (grade 7);
- inferring author's intent (grade 7 and 10); and,
- evaluating ideas and information (grade 7 and 10).

Potential open-ended questions were developed by teams of teachers, assembled into pilot forms, and pilot tested in several classrooms. Results of the pilot tests and Advisory Committee comments were used to revise the forms which were then included in a timed pilot test.

Student performance on the open-ended forms was reported only at the provincial level. Overall, a 4% sample of students--typically, one in each classroom--completed the open-ended forms, yielding 1400 responses at grade 4, 1500 at grade 7, and 1200 at grade 10. At each grade level, a random sample of more than 300 papers was selected for scoring. Scoring procedures and results are described in Chapter 5 of this report.

2.2.9 Psychometric Characteristics of the Achievement Forms

Content validity of the achievement forms was ensured by the test development procedures described earlier: test specifications were developed according to expert advice; item-domain congruence was established through a series of reviews. Following administration of the achievement surveys, generalizability analyses were employed to estimate the standard errors and reliabilities associated with provincial means for domains, forms and cross-form achievement. At the same time within-grade domain results were compared across forms.

Tables 2.6 through 2.8 present provincial means expressed as mean percent correct responses, along with associated standard errors and alpha coefficients. For the purpose of this report, reliabilities and standard errors associated with Domain totals are of greatest interest; as shown in Tables 2.6, the domain estimates at each grade level are sufficiently stable to permit the desired interpretation of results. At grade 4, reliabilities of the provincial domain means range from .84 to .92; the width of the 95% confidence intervals is typically less than one-quarter of a percentage point. At grade 7, associated domain reliabilities range from .70 to .82; 95% confidence intervals for provincial means span less than one-half a percentage point. At grade 10, reliabilities for Domains 2 through 5 range from .77 through .80. For Domain 1, however, the alpha coefficient is somewhat lower, at .53, suggesting that some caution is indicated in interpreting scores for this domain. The standard errors associated with provincial domain means at Grade 10 create 95% confidence intervals spanning less than one percentage point.

Tables 2.6 through 2.8 also provide an indication of comparability across forms. Within each grade, total scores vary less than 3% across forms--in raw score terms, by less than 1 item out of 40. At grade 4, variations in difficulty are most apparent for Domains 1 and 4, with form R apparently presenting the most difficult task and form T, the least difficult. At grade 7, the only substantial difference in difficulty level by form occurs for Domain 3, Inferential Comprehension, where form R appears to be appreciably more difficult. While overall difficulty level is comparable across forms at grade 10, there are a number of substantial within-domain variations where scores vary as much as 7 or 8%. The generally consistent level of difficulty across forms suggests that the use of multiple-forms will not affect school and district performance results.

Table 2.6
Provincial Means, Standard Errors, and Reliability Estimates: Grade 4

Domain	Booklet	Number of Items	Mean % Correct	SE of Mean (in %)	Alpha
Words/ Expressions	R	10	67.56	.18	.56
	S	10	72.16	.18	.47
	T	10	73.30	.18	.41
	Total	30	71.01	.06	.84
Literal Comprehension	R	10	74.48	.17	.70
	S	10	74.92	.17	.62
	T	10	76.24	.17	.53
	Total	30	75.20	.05	.89
Inferential/ Critical Comprehension	R	9	71.77	.19	.62
	S	9	71.79	.19	.38
	T	9	69.37	.19	.53
	Total	27	70.89	.06	.86
Locates/Uses Information	R	11	73.40	.15	.75
	S	11	77.96	.15	.74
	T	11	80.40	.15	.73
	Total	33	77.26	.05	.92
Combined	R Total	40	71.84	.08	.91
	S Total	40	74.36	.08	.89
	T Total	40	75.10	.08	.88
	TOTAL	120	73.77	.03	.97

Table 2.7
Provincial Means, Standard Errors, and Reliability Estimates: Grade 7

Domain	Booklet	Number of Items	Mean % Correct	SE of Mean (in %)	Alpha
Words/ Expressions	R	8	70.62	.20	.38
	S	8	70.52	.21	.31
	T	8	69.92	.21	.22
	Total	24	70.35	.07	.70
Literal Comprehension	R	8	78.15	.18	.29
	S	8	77.88	.18	.39
	T	8	78.51	.18	.26
	Total	24	78.18	.06	.79
Inferential Comprehension	R	9	63.78	.20	.36
	S	9	77.17	.18	.38
	T	9	77.12	.17	.46
	Total	27	72.69	.06	.81
Critical Comprehension	R	5	71.64	.26	.34
	S	5	71.36	.26	.34
	T	5	68.10	.27	.22
	Total	15	70.37	.08	.73
Locates/Uses Information	R	10	76.41	.16	.53
	S	10	78.76	.16	.45
	T	10	77.15	.17	.30
	Total	30	77.44	.05	.82
Combined	R Total	40	72.16	.08	.85
	S Total	40	75.65	.08	.86
	T Total	40	74.84	.08	.85
	TOTAL	120	74.22	.03	.95

Table 2.8
Provincial Means, Standard Errors, and Reliability Estimates: Grade 10

Domain	Booklet	Number of Items	Mean % Correct	SE of Mean (in %)	Alpha
Words/ Expressions	R	7	67.16	.25	.31
	S	7	67.06	.26	.22
	T	7	60.48	.25	.27
	Total	21	64.90	.08	.53
Literal Comprehension	R	7	69.55	.23	.39
	S	7	72.85	.23	.22
	T	7	75.50	.23	.35
	Total	21	72.63	.07	.80
Inferential Comprehension	R	8	68.35	.22	.44
	S	8	65.55	.23	.34
	T	8	75.49	.21	.40
	Total	24	69.80	.07	.82
Critical Comprehension	R	10	65.36	.20	.45
	S	10	57.68	.21	.33
	T	10	65.82	.20	.45
	Total	30	62.95	.07	.82
Locates/Uses Information	R	8	79.93	.19	.39
	S	8	76.47	.21	.23
	T	8	71.47	.22	.22
	Total	24	75.96	.07	.77
Combined	R Total	40	69.92	.09	.86
	S Total	40	67.31	.10	.84
	T Total	40	69.79	.09	.86
	TOTAL	120	69.01	.03	.95

Finally, data summarized in Tables 2.6 through 2.8 suggest that there is a strong association among domain scores; that is, regardless of the domain label, the items used appear to measure a general reading skill. Examination of domain intercorrelations reported in Chapter 6 supports this view. In this, findings of the 1984 assessment are congruent with those reported in the 1980 assessment (Tuinman and Kendall, 1980, p. 50).

2.3 Development of the Affective Scales

2.3.1 Selection and Development of Items

The Advisory Committee assigned highest priority to the assessment of attitudes toward reading. The 1980 reading assessment included the Estes Reading Attitude Scale (Estes, Johnstone, and Richards, 1975) at all grade levels; results confirmed the reliability, validity and utility of the scale. The Technical Advisory Committee suggested re-administration of the Estes scale as part of the 1984 assessment to permit estimation of change in the affective domain; the Advisory Committee concurred, but strongly requested that additional affective items be included to allow for more specific interpretation of student responses. The Committee expressed particular interest in student attitude towards various categories of reading material, and towards various purposes for reading. Additional sets of items were thus assembled, reviewed, and pilot tested: one of these probed student perceptions of the value of reading for various purposes; the other elicited reponses to types of reading material encountered both in school and outside of school. Affective item sets, replicated across grade levels, are described below:

- Form R at all grades included the Estes Reading Attitude Scale which presents 15 statements about reading; the student responds to each statement using a 5-point scale: strongly agree; agree; can't decide; disagree; strongly disagree;

- Form S at all grade levels included a Value of Reading Scale which asked students to indicate the usefulness of reading for ten purposes; a 5-point response scale is anchored with: very useful; quite useful; can't decide; not very useful; not at all useful; and,

- Form T at all grades included a Reading Enjoyment Attitude Scale where students responded to twelve listed types of reading materials using the options: like them very much; sometimes like them; can't decide; usually don't like them; never read them.

The three scales along with response distributions are shown in Appendix D.

The open-ended forms (Form Q) did not include a fixed-response affective scale; rather, students were asked to provide responses to three questions:

1. What do you usually like to read?

2. What was the most recent book, magazine or newspaper you read in your spare time?

3. List two ways that reading is important to you.

A coding system for categorizing responses was developed using actual responses of 120 students at each grade level. Resulting response categories and frequencies are presented in Chapter 4, along with distributions of response for the items used in the three fixed-response scales.

2.3.2 Psychometric Characteristics of the Affective Scales

Internal consistency and construct validity of the 15-item Estes Reading Attitude Scale (ERAS) have been well documented (see, for example, Dulin & Chester, 1974; Estes, Johnstone, & Richards, 1975). Tuinman and Kendall (1980) reported findings from the 1980 Reading Assessment which indicated that the scale, initially designed for use with upper elementary and secondary grades, also provided a reliable and valid estimate of attitude toward reading for the population of grade 4 students. They reported internal consistency estimates of .82, .89, and .92, at grades 4, 8, and 12 respectively; and factor analyses which suggested that the 15 items represented a single construct. Additional factor analyses indicated that while the ERAS loaded on the same factor as achievement scores, it did so at a lesser magnitude than scores for achievement objectives (p. 31). Several of these analyses were replicated during the 1984 assessment using 950 student responses at each grade level. Findings included:

1. The ERAS demonstrated high internal consistency at all grades, with reliability estimates of .79, .76, and .82 at grades 4, 7, and 10 respectively; and,

2. Within-grade factor analyses of the 15 items confirmed the existence of a single scale. Principal component analyses (Harman, 1967), using a varimax rotation, produced a single factor with an eigenvalue greater than one for the grade 10 sample. At grades 4 and 7, two such factors emerged; however, the large eigenvalue of the first factor, and the relatively small (only slightly greater than one) value of the second supported a one-factor solution. Further, all positively-worded items loaded on the first "factor," with the negatively-worded items loading on the second, thus recreating the positive-negative structure of the scale. This replicates the 1980 findings.

Correlational analyses involving the ERAS, the achievement survey, and background variables supported the construct validity of the ERAS. These are reported in Chapter 6 which deals specifically with associations among background variables and achievement and affective scores.

The second affective measure, the Value of Reading Scale (VRS) which appeared on Form S at all grades, was developed specifically for this study, to produce subscale scores to estimate perceived value of reading to:

- acquire information;
- enhance school achievement;
- improve understanding of self and others; and
- derive relaxation and enjoyment.

Principal components analyses, with a varimax rotation, were completed at each grade level to confirm the hypothesized subscale structure. Factor loadings for each factor with an eigenvalue greater than one are shown in Appendix B. Overall, results supported the hypothesized structure; specific findings included:

1. At all grades, the three "understanding" items loaded on a single factor;

2. At grades 7 and 10, the two "school achievement" items loaded on a single factor; at grade 4, where a three-factor solution emerged, they appeared with the "acquire information" loadings; and

3. At all grades, reading "to learn about famous people and important events" loaded with reading for relaxation and enjoyment, rather than with the other "acquire information" items as had been expected.

Chapter 4 of this report presents item-level results and associations among the VRS subscales; analyses of relationships among the VRS subscales, background information and achievement scores appear in Chapter 6. Results of the analyses reported in Chapter 6 provide strong support for the construct validity of the VRS as a measure of beliefs about the value of reading.

The final affective measure, the Reading Enjoyment Scale (RES), appeared as a set of 12 items, with a Likert-response scale used to indicate degree of enjoyment for various types of reading material encountered both in and out of school. At all grades, principal components analyses with a varimax rotation produced four factors with eigenvalues greater than one (see Appendix B for within-grade factor loadings).

At grades 7 and 10, factor loadings suggested that four factors for student enjoyment could be labelled: (1) fiction and biography, (2) non-fiction, (3) periodicals, and (4) comic/cartoon books. Novels, short stories, and poetry read at school loaded with other literary materials; science and social studies texts with other non-fiction. The one item which dealt with comic/cartoon books formed a single factor.

At grade 4, however, the pattern was much less clear. All school-related materials loaded on a single factor, although science and social studies texts carried a double-loading. Enjoyment of comic books formed a single factor. Magazines and "how-to" books formed one factor (which included the second loadings for science and social studies texts); newspapers, fiction, biography, and general non-fiction formed another, along with a second loading for novels read in school. These results suggest that, at grade 4, patterns of preference for various types of reading material are relatively dynamic; by grade 7, however, they appear to be firmly established.

Item-level results of the Reading Enjoyment Scale are presented in Chapter 4; associations with background and achievement variables are described in Chapter 6.

2.4 Student Background Characteristics

At each grade level, students were asked to complete a series of questions related to biodemographic characteristics, reading and other leisure activities, school and classroom characteristics, and extent of reading material in the home. This set of questions was somewhat more extensive than that used in previous assessments. Because no principal or teacher questionnaires were included in 1984, it was desirable to elicit as much information as possible from the students, themselves. Table 2.9 summarizes background information sought. Distributions of results for these variables and associations among these variables and affective and achievement outcomes are presented in Chapters 4 through 6 of this report. Detailed results are shown in Appendix C.

2.5 Packaging, Distribution and Administration: Final Forms

Using 1984 enrollment data provided by the Ministry of Education, the Educational Research Institute of Britich Columbia (ERIBC) prepared packages of material for each school, which were distributed by courier in the two-week period preceding test administration. Each package included:

1. A letter to the principal which described procedures for scheduling of the survey and return of student responses;

2. Letters to teachers which provided background information and general instructions for administration;

3. Sets of specific instructions for test administration including a detailed guide to the background information questions and a teacher's copy of Form Q;

4. Student survey booklets with Forms R, S, and T interleaved, and one Form Q booklet in every set of 25; and

5. Machine-scorable response sheets designed for use with Forms R, S, and T, and for the Background Information on Form Q.

The assessment surveys were completed between May 6 and May 11. Materials were returned to School District offices; then student response sheets and completed Form Q booklets were forwarded to ERIBC for scoring and analysis.

Return rates, calculated as the percent of eligible students (according to Fall 1983 enrollment data) for whom responses were received, were 94% at grade 4 and 93% at grade 7, and somewhat lower, at 77%, for grade 10. The return rate for grade 4 is consistent with those reported for previous B.C. assessments; typically, between 94 and 95% of eligible grade 4 students participate in B.C. Assessments. The return rate of 93% at grade 7 is, as expected, slightly above the previously reported rates of 90 to 91% for grade 8. The return rate of 77% for grade 10, however, was somewhat smaller than anticipated, although it is consistent with previous data for grade 12, where between 71 and 80% of students typically participate.

Table 2.9
Summary: Student Background Information Solicited at Each Grade Level

Category/variable	Grade 4	 7	 10
Biodemographic			
Age	yes	yes	yes
Gender	yes	yes	yes
School/classroom features			
School size	yes	yes	yes
Class size	yes	yes	yes
Grades in classroom	yes	yes	no
Program	yes	yes	yes
Instructional Status			
Attends learning assistance	yes	yes	yes
Has attended ESL classes	yes	yes	yes
Attends ESL now	yes	yes	yes
Current reader(s)	yes	yes	no
Receives reading instruction	no	no	yes
Days absent	yes	yes	yes
Home background			
First language	yes	yes	yes
Language spoken at home	yes	yes	yes
Number of books in home	yes	yes	yes
Education: father	no	no	yes
Education: mother	no	no	yes
Reading/leisure activities			
Hours reading yesterday	yes	yes	yes
Material read yesterday	yes	yes	yes
No. of library books last month	yes	yes	yes
Hours TV yesterday	yes	yes	yes
Most preferred leisure activity	yes	yes	yes
Least preferred leisure activity	yes	yes	yes
Postsecondary plans	no	no	yes

2.6 Scoring and Analyses

The Technical Agency, ERIBC, completed all scoring and data analyses. The following series of analyses were completed using the population of student reponses at all grade levels:

1. The 40-item achievement surveys on Forms R, S and T were scored, response distributions prepared, and mean percent correct for each domain and objective calculated. For each item, percent correct was based on the number of students who submitted a response sheet; failure to respond to an item was considered an incorrect response.

2. Psychometric characteristics of the achievement surveys were examined, using response distributions, item-test correlations provided by the test scoring program as well as generalizability analyses (using the GENOVA program, Crick & Brennan, 1983) which estimated reliabilities and standard errors associated with provincial mean scores within and across domain and form. (Results of these analyses were described in section 2.2.8.)

3. Response distributions for the background questionnaire and affective scale items were prepared.

The next series of analyses used a 10% randomly drawn sample of student responses to each form at each grade. These analyses were replicated at each grade level and included:

1. The factorial structures of the three affective instruments were examined. Results of these analyses were described in section 2.3.2.

2. Associations among background variables were examined, using chi-square, Spearman's Rho, and Pearson's product moment coefficient.

3. Item results for the three affective scales were aggregated to produce the scale and subscale scores suggested by the factorial analyses described above. Intercorrelations among subscale scores were examined.

4 Item results for the achievement surveys were aggregrated to produce domain scores and a total score for each student. Intercorrelations among domain scores were examined.

5. A series of one-way analyses of variance, using Tukey's post hoc procedure, were completed to examine the relative performance of subpopulations defined in terms of selected background characteristics. Dependent variables included domain and total achievement scores, mean scale value for the Estes Reading Attitude Scale, the Value of Reading subscales, and the Reading Enjoyment scale subscales.

6. Multiple regression analyses, using a priori ordering in a hierarchical model, were completed to examine relative contributions of biodemographic, socio-cultural, instructional placement, and leisure behaviour variables to affective and achievement outcomes. A second series of such analyses included affective scores in prediction models for achievement.

Scoring and analyses of responses to the open-ended Q-form items were completed separately, using a random sample of 315 student responses at each grade level. Scoring procedures employed anchored rating scales, described in Chapter 5 of this report. Analyses included:

1. Preparation of response distributions for the rating scales and content categories;
2. Factor analyses of item-level results at each grade level;
3. One-way analyses of variance to examine relative performance of subpopulations defined in terms of selected background characteristics; and
4. Estimates of association--typically, chi-square analyses--between response categories for the open-ended affective questions and selected background vaiables.

Throughout ensuing chapters of this report, analytic procedures are detailed as results are presented. Additional technical information is available in the Technical Report, a procedural manual prepared by the Technical Agency, ERIBC.

2.7 Interpretation and Reporting

Three Interpretation Panels, one at each grade level, were formed to assist in the interpretation of student achievement data. Panels were composed of elementary, secondary, and postsecondary teachers; school trustees; district staff; and parents (see Appendix A for a list of participants). Members of the Advisory Committee served as chairpersons.

Panels met in Richmond in early June; interpretation procedures are outlined below:

1. Prior to the first meeting, panelists individually answered all test items appropriate to the grade they were to evaluate. They also established, in terms of the percent of students answering correctly, two levels of performance for each item: "acceptable" and "desirable." An "acceptable" level of performance represented satisfactory performance by some minimum percentage of students; performance below this level indicated a provincial weakness. A "desired" level of performance represented the percentage of students which panelists would like to see responding correctly; performance above this level indicated a provincial strength.

2. At the meeting, individual panelists established "acceptable" and "desirable" levels of performance for each objective and domain by averaging over the performance standards they had established for the individual items associated with that objective/domain.

3. For each objective or domain, panelists conferred in groups of three or four to arrive at consensus standards. They were encouraged to present individual rationales and reach a group decision on "acceptable" and "desirable" standards.

4. The Panel as a whole then considered each group's standards, and agreed on Panel standards for "acceptable" and "desirable."

5. Student results for the relevant set of items were presented. Panelists, working in small groups, compared these to the standards established in (4) above. Each group rated student performance on a 5-point scale: (1) Weak, (2) Marginally Satisfactory, (3) Satisfactory, (4) Very Satisfactory, and (5) Strong.

6. The Panel as a whole then examined each group's ratings and agreed on a single rating for the objective/domain under discussion.

This procedure was repeated for each objective associated with understanding words and expressions, and with locating and using information. The various comprehension domains were treated as single entities; that is, standards were established and judgements made about the domain as a whole, rather than about individual objectives within domain.

The process described here differed in three important ways from those used in previous assessments:

1. Panelists focused on establishing performance standards through consensus;

2. Judgements about performance were explicitly related to the standards established by the Panel; and

3. Both standards and judgements were established at the objective and domain level, rather than focusing on individual items.

A series of reports and related documents were prepared following the Interpretation Panels. These include:

1. A Summary Report, prepared by the Contract Team, which summarizes results and procedures and details conclusions and recommen- dations;

2. This General Report, prepared by the Contract Team, which provides a detailed report of all aspects of the assessment;

3. Update, a brochure prepared by the Learning Assessment Branch, which outlines procedures and recommendations;

4. District Reports for each of the 75 B.C. school districts which describe results for the student population within the relevant district;

5. School Reports for each B.C. school which present results for the student population within the individual school;

6. A District Interpretation Guide which outlines procedures to be followed by individual districts in interpreting local results; and

7. A Technical Report prepared by members of the Technical Agency, which describes all technical and systems aspects of the assessment;

The Summary and General Reports and the Update are intended for general distribution; District and School Reports are provided to only the District Superintendent concerned. The Technical Report is an internal Ministry document. The District Interpretation Guide is intended for a specific audience; however, a limited number of copies are available for general distribution.

CHAPTER 3

ACHIEVEMENT SURVEY RESULTS

3.1 Overview

In this chapter, results of the multiple-choice achievement surveys are detailed by domain for each of grades 4, 7, and 10. Within each domain, item-level results are presented, along with Interpretation Panel standards for "acceptable" and "desirable" performance. (See Appendices E, F, and G for complete item-level results.) As well, Panel judgements about quality of performance are given. Comparisons between 1984 and 1980 student performance are shown within relevant domains.

A final section of this chapter offers cross-grade comparisons, describes B.C. student performance on items previously used in the National Assessment of Educational Progress (NAEP), and examines changes in Interpretation Panel judgements over three B.C. reading assessments.

3.2 Achievement Survey Results: Grade 4

The grade 4 achievement survey instruments included 120 multiple-choice items representing four domains; these items were systematically assigned to Forms R, S, or T, to ensure that difficulty level, domain coverage, and task requirements were equivalent across forms.

3.2.1 Word meaning

At grade 4, 30 items were included in Domain 1, Understands Words and Expressions, and assigned to one of four objectives:

1.1 Recognizes frequently occurring words (9 items);

1.2 Derives meaning from context clues (6 items);

1.3 Identifies appropriate meaning for words with multiple meanings (9 items);and

1.4 Derives meaning from structural analysis (6 items: 5 unique items; one appears on two forms).

For this domain, the Interpretation Panel established "acceptable" and "desirable" standards and made judgements about student performance for each of the four objectives before considering the domain as a whole. Results for the four objective are shown in Tables 3.1 through 3.4. Eleven of the items were administered as part of the B.C. 1980 Reading Assessment; comparative results for 1980 and 1984 are shown in Table 3.5.

Results for the 9 items associated with Objective 1.1, Recognizes Frequently Occurring Words, are shown in Table 3.1 along with Interpretation

Panel standards for "acceptable" and "desirable." In this and subsequent tables, items have been rank-ordered according to percent of students who answered correctly; panel standards for "acceptable" and "desirable" have been inserted using dotted lines; and mean percent correct is shown at the bottom of the table, along with the Interpretation Panel's judgement of student performance as:

5 Strong,
4 Very satisfactory,
3 Satisfactory,
2 Marginally satisfactory, or
1 Weak.

For this objective, words were presented with minimal context, as shown in item T2, below:

T2 The child was in a state of panic. Panic means ...

%		
4	A.	starvation
80	*B.	terror
4	C.	tiredness
3	D.	happiness
8	E.	I don't know

*indicates the correct answer

Such items place greatest emphasis on memory for the appropriate meaning of the target item. The Panel judged this set of words to be relatively difficult for grade 4 students, and established "acceptable" performance as 60% and "desirable" as 82%. As shown in Table 3.1, student performance exceeded the Panel standard for "desirable" on 3 items; 5 items fell between "acceptable" and "desirable." Only one item fell below the "acceptable" standard; Item S5 along with the distribution of responses is shown below:

S5 He inquired about the game. Inquired means ...

%		
56	*A.	asked.
5	B.	shouted.
9	C.	cheered.
8	D.	felt badly.
21	E.	I don't know.

This response pattern is typical of relatively difficult vocabulary items at grade 4: students who failed to select the correct response were more likely to choose "I don't know" than to select an incorrect option, and much more

likely to select "I don't know" than their older--and more testwise--counterparts in grades 7 and 10. In interpreting these results, it should be kept in mind that use of the "I don't know" option serves to deflate results when compared to classroom or standardized achievement tests; that is, for the item shown above, if only options A through D were presented, some of the 21% who selected "I don't know" would have correctly selected option A, in effect raising student performance level. The apparent propensity of many young students for choosing "I don't know" whenever they are uncertain of the correct answer creates a degree of ambiguity in the interpretation of results. Good readers, of course, are constantly making predictions, formulating hypotheses and "guessing" to derive meaning from texts. Such behaviour, overtly encouraged by most primary teachers, is subtly discouraged when the same students encounter "I don't know" as a constant test option.

Table 3.1
Provincial Results for Grade 4: Objective 1.1,
Recognizes Frequently Occurring Words

Item Number	Description	Percent Correct
T1	museum	94
R5	noticed	92
S4	customer	90
-----PANEL STANDARD	-------------DESIRABLE-----------------------------------	82%
S6	peered	81
T2	panic	81
T3	opponent	71
R4	infant	66
R6	astonishment	66
-----PANEL STANDARD	-------------ACCEPTABLE---------------------------------	66%
S5	inquired	57

Mean Performance------------------- 77.6%

PANEL JUDGEMENT: Strong (5)

The Interpretation Panel judged student performance on Objective 1.1 to be Strong, 5 on a 5-point scale. The median percent correct of 80% was extremely close to the "desirable" standard of 82%; mean performance (77.6%) was slightly lower.

Table 3.2 presents results for Objective 1.2, Derives Meaning from Context. Four of these items were administered in 1980; the remaining two items were used at grades 4, 7 and 10 in the current assessment to permit cross-grade comparisons (see Section 3.5.1). Interpretation Panel standards reflected the perceived difficulty of this set of items for grade 4 students: "acceptable" performance was established as 63%; "desirable," as 74%. Performance on one item exceeded the "desirable" standard, for three items, it fell between "acceptable" and "desirable," and for two items, below "acceptable." Response distributions for two items, R7 and S10, are given below:

R7 Our soccer team isn't very good. In fact, until yesterday, they had lost every game. We were really surprised when they triumphed over Lake City last night.

When this teem triumphed they ...

%		
12	A.	lost the game.
4	B.	got into a fight.
68	*C.	won the game.
6	D.	tied the score.
9	E.	I don't know.

S10 A shout went up from the crowd as they saw the bright green and yellow livery of the palace guard.

The word livery most likely means ...

%		
51	*A.	special uniform.
5	B.	cannons.
3	C.	horses.
14	D.	royal family.
26	E.	I don't know.

Again, as with Objective 1.1, a relatively high proportion of students chose "I don't know" as the response to Item S10, in spite of the presence of systematic contextual clues. Students who chose incorrect options appear to have based their responses on associations; for example, the choice of "royal family" for item S10. Such responses are consistent with what Piaget (in Ginsberg & Opper, 1979) calls syncretism: the tendency to connect a series of separate ideas into one confused whole. In other words, the child does not try to change knowledge already stored to accommodate the real meaning of a concept; rather, the child selects one or two words from the question and free associates. It is interesting to note that while "royal family" was the most frequently selected incorrect option for question S10 at grade 4, it was the least frequently selected when the same question was presented at grade 10.

Table 3.2
Provincial Results for Grade 4: Objective 1.2, Derives Meaning from Context

Item Number	Description	Percent Correct
T8	on purpose in context	75
-----PANEL STANDARD	-------------DESIRABLE------------------------------------	74%
R7	triumphed in context	68
S9	opposite in context	68
T7	ceremony in context	64
-----PANEL STANDARD	-------------ACCEPTABLE----------------------------------	63%
S10	livery in context	51
R8	fortuitous in context	32

Mean Performance------------------- 59.7%

PANEL JUDGEMENT: Satisfactory (3)

The Interpretation Panel rated performance on Objective 1.2 as Satisfactory; median percent correct of 66% is slightly above the "acceptable" standard of 63%, while the mean, 59.7%, is somewhat lower, due to the extreme difficulty of one item.

The third objective in Domain 1 deals with selecting the appropriate meaning--with the context provided--for words with multiple definitions. Item-level results and panel standards are shown in Table 3.3. Student performance exceeded the Panel's standard for "desirable" on six of nine items; performance fell below "acceptable" on only one item. Response distributions for two items, T4 and T6 are given below:

T4 After the cake cools, I'm going to frost it. In this sentence, the word frost most likely means...

%		
6	A.	put frozen dew on.
8	B.	chill.
2	C.	keep very still.
82	*D.	put icing on.
2	E.	I don't know.

T6 He didn't feel that our explanation was satisfactory.

In this sentence, feel means ...

%		
49	*A.	believe.
23	B.	touch.
19	C.	have an emotion.
3	D.	hint.
5	E.	I don't know.

Again, the tendency of many young students to select a response by association --rather than deduction--is apparent: the preferred distractor for T4 is "chill;" for T6, "touch." On the other hand, the 19% of students who chose "have an emotion" as their response to T6 have made a relatively subtle error.

Table 3.3
Provincial Results for Grade 4: Objective 1.3,
Discriminates Among Multiple Meanings

Item Number	Description	Percent Correct
T5	out in context	90
S1	tide in context	89
R2	filed in context	83
S2	needle in context	82
T4	frost in context	82
R3	scaled in context	80
-----PANEL STANDARD	--------DESIRABLE--	80%
S3	record in context	75
R1	like in context	65
-----PANEL STANDARD	--------ACCEPTABLE--	65%
T6	feel in context	49

Mean Performance------------------- 77.2%

PANEL JUDGEMENT: Strong (5)

The Interpretation Panel judged student performance on this objective to be Strong; the median item percent correct of 82% exceeded their "desirable" standard of 80%.

Objective 1.4, Derives Meaning through Structural Analysis, was given low priority for assessment by the 1984 Advisory Committee; the set of six items was included at the Ministry's request, to permit comparison of 1984 results with those from 1980. Five unique items were included; item S8 was repeated as T10 to maintain comparability of test forms.

Table 3.4 presents item-level results and panel standards for Objective 1.4: two items fell between "acceptable" and "desirable;" four were below "acceptable." Response distributions for two items, T9 and T10, are given below:

T9 He reshuffled his books.

Reshuffled means ...

%		
72	*A.	shuffled again.
5	B.	shuffled between.
4	C.	shuffled next to.
5	D.	shuffled across.
14	E.	I don't know.

T10 Most people found Tim very likeable.

Tim ...

%		
27	A.	liked everyone.
10	B.	enjoyed being liked.
5	C.	tried to be liked.
55	*D.	was easy to like.
3	E.	I don't know.

Again, students who failed to select a correct response tended either to choose "I don't know" as in T9 above, or to create a response through association, as in T10, where the association between "most people" and "everyone" appealed to more than one-quarter of the students.

The Interpretation Panel rated student performance on this objective Marginally Satisfactory, with both median and mean percent correct falling slightly below the "acceptable" standard of 65%. Panelists were insistent, however, that this objective not be given priority in either instruction or future assessments, judging it to be the least important of the objectives assessed at grade 4. In this, they concurred with the Advisory Committee.

Table 3.4
Provincial Results for Grade 4: Objective 1.4, Uses Structural Analysis to Identify Word Meaning

Item Number	Description	Percent Correct
-----PANEL STANDARD------------	DESIRABLE--------------------------------	78%
S7	unjustly	76
T9	reshuffled	72
-----PANEL STANDARD------------	ACCEPTABLE-------------------------------	65%
R10	undefeated	62
R9	inactive	61
T10	likeable (S8)	55
S8	likeable (T10)	53

Mean Performance------------------- 63.2%

PANEL JUDGEMENT: Marginally Satisfactory (2)

Eleven items from Domain 1 appeared previously on the 1980 Reading Assessment. Table 3.5 compares grade 4 performance from 1980 with that from 1984. Two sets of data are presented for 1980: the "adjusted" percent correct column is based on the students who attempted the item; the "raw" percent correct is based on all students who wrote the test. The 1984 p-values are based on all students who wrote the test; "omits" are treated as incorrect answers. Data shown in Table 3.5 indicate, on average, a change of 2 or 3% favouring the 1984 population; in fact, when the items are considered as a set, results are relatively stable over the four-year period. Interpretation Panel standards are stable as well: in 1980, performance on "structural analysis" was considered Marginally Satisfactory; in 1984, similar performance received the same rating. The four items associated with context clues received Marginal and Satisfactory ratings in 1980; with performance on two of the items improving appreciably, the 1984 results were rated Satisfactory. Clearly, there has been no deterioration of standards since the last assessment.

When the 1984 Interpretation Panel examined overall results, peformance on Domain 1 was rated Very Satisfactory. Panelists concluded that, overall, grade 4 students have developed the word recognition and analysis skills demanded by current B.C. curricula and instructional materials.

Table 3.5
Grade 4: Domain 1, Word Meaning:
Comparison with 1980 Grade 4 Performance

Objective	Item		1980		1984
			adj-p	raw-p	raw-p
1.1	S06	peered	74	73	81
1.2	R07	triumphed	60	60	68
	S09	opposite	69	69	68
	T07	ceremony	62	62	64
	T08	on purpose	71	70	75
1.4	R09	inactive	61	60	61
	R10	undefeated	59	59	62
	S07	unjustly	74	74	76
	S08	likeable	55	52	53
	T10	likeable	55	52	55
	T09	reshuffled	70	70	72
	Mean		64.5	63.7	66.8

3.2.2 Literal Comprehension

Domains 2 and 3 at grade 4 addressed passage comprehension, with stimulus passages including:

- literary: narrative - 4 passages
- literary: poetry - 1 poem
- informative: social studies - 1 passage
- informative: functional - 2 passages

The poem appeared on all three forms of the test, although associated items varied from one form to another; as well, one of the functional passages appeared on two different forms. Each of forms R, S and T included four stimulus passages for comprehension items. The poem is reproduced here as Figure 3.1; the social studies passage--selected from material in preparation for the B.C. grade 4 social studies curriculum--appears as Figure 3.2.

"The Mouse"

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor --

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

The bread box is tin
And I cannot get in.

The Jam's in a jar
My teeth cannot mar.

The cheese sits by itself
On the ice-box shelf.

All night I run
Searching and seeking;
All night I run
About the floor.

Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

Elizabeth Coatsworth

Figure 3.1 Poem from Grade 4 Surveys

NANUK

Nanuk liked this time of year. Now that she was 12 springs old, she could do many things to help. She was clever and strong, and she learned quickly. Nanuk already knew many of the ways of her people. She could make clothes and sew a boat cover. She could spear fish, drive a dog team and make a snug pack for travelling. It gave Nanuk a good feeling to do jobs that were important to her family.

The families travelled by boat along the seacoast and walked inland to their campsite. Everyone kept busy while waiting for the caribou to come. The men worked on their weapons. The women sewed and prepared food for their families. Whenever they had time, the women searched the hills for twigs from willow bushes. After the hunt they would build fires for melting caribou fat, an important food for their people.

Where Nanuk lived, there were no trees. Even plants grew very, very slowly. So finding wood for fires was not easy. The women searched everywhere, including the river. Sometimes they were lucky enough to find driftwood that had been carried downstream. Even small pieces were useful.

-- Heather Smith Siska

Figure 3.2 Social Studies Passage from Grade 4 Surveys

Domain 2, Literal Comprehension, included 30 items--10 on each form. The Advisory Committee for the 1984 Reading Assessment suggested that this domain of material receive highest priority at grade 4. Items within this domain required students to indicate understanding of central ideas, of sequence, of relationships, and of supporting detail, when such material is explicitly stated in text. A relatively inclusive view of literal comprehension was adhered to in designing items. For example, Pearson and Johnson (1978) devised a series of question types with "Textually Explicit" (TE) items considered to be those where both the question information and the response information are stated in a single sentence in the text. According to this classification system, as soon as a synonym is substituted, a unit longer than the sentence must be consulted, or a discrimination made between two similar pieces of information, and the item is no longer textually explicit; rather, some level of inference is involved.

The difficulties in distinguishing among levels of comprehension are enhanced by the interactive nature of reading: different students bring varying degrees of knowledge and experience to reading tasks. Langer (in Chapman, 1981) has outlined the association between student background and level of response: if a student has a great deal of background knowledge about a concept, responses take the form of higher level (superordinate) concepts, analogies, or linking the concept with another concept; if a student has some knowledge about the concept, responses take the form of examples, attributes, or defining characteristics; if the student has little prior information about the concept, responses focus on low-level associations or firsthand experiences.

The current assessment used a relatively flexible and pragmatic approach to differentiating levels of comprehension: the teachers who prepared items indicated the level of comprehension addressed; Review Panelists confirmed those classifications they judged to be valid and noted items which they felt had been inappropriately categorized. The items assigned to Domain 2, Literal Comprehension, then, are those judged by representative panels of educators to validly reflect the domain.

Table 3.6 presents item-level results and Interpretation Panel standards for the 30 items which were assigned to Domain 2. The Panel considered items within this domain as a single set, rather than as representing discrete objectives; thus, overall acceptable and desirable standards were established, rather than a series of standards for each objective. For this domain, student performance exceeded the Panel's standard for desirable on 11 of the 30 items; a further 15 items fell between acceptable and desirable, leaving only 4 items below the "acceptable" standard.

It seems clear from Table 3.6 that variations in item difficulty cannot simply be attributed to variations in passage type or subobjective assessed. For example, items S27 and S24 which have items with relatively high (86 and 87) p-values, were associated with supporting information from the Deep River Elementary School notice about an upcoming track meet; two items with relatively low (57 and 59) p-values were associated with the same objective and stimulus passage. When the distributions of responses to these items are examined, it becomes clear that the more difficult items require students to determine which of two pieces of information is relevant in terms of the question. A section of the stimulus passage is provided below, along with items S25, S26, and S27.

DEEP RIVER ELEMENTARY SCHOOL

On Thursday, June 3, our school will take part in the District Track and Field Meet at the Sixth Avenue Ball Park in Port Edwards. Transportation is free of charge. If you are interested in having your child take part please sign and return this form to the school by Wednesday, May 26.

You are reminded that lunch is served by our Home-School Committee. The menu includes hot dogs, salad, milk, and fresh fruit at a charge of $2.50 per person. If you wish to buy lunch for your child, please send the $2.50 in a sealed envelope to the school no later than Friday, May 28.

S25 What should students do with the form after it has been signed by a parent or guardian?

%		
3	A.	Bring it to the Track Meet.
64	*B.	Return it to the school by Wednesday, May 26.
26	C.	Return it in a sealed envelope by May 28.
3	D.	Give it to the Home-School president.
2	E.	I don't know.

S26 What is the cost of transportation?

%		
36	A.	$2.50.
1	B.	$4.00.
02	C.	$5.00 for the whole family.
57	*D.	There is no charge.
2	E.	I don't know.

S27 According to the announcement, what is on the menu?

%		
87	*A.	salad, milk, fruit and hot dogs.
4	B.	hot dogs, salad, chocolate milk.
2	C.	fruit, hot dogs, and chips.
2	D.	salad, ice cream and hot dogs.
3	E.	I don't know.

Figure 3.3 Informative Passage from Grade 4 Surveys

Table 3.6
Provincial Results for Grade 4: Domain 2,
Literal Comprehension

Item Number	Description	Percent Correct
S12	Central idea - narrative (Arnitoo)	88
T17	Central idea - narrative (Rabbit)	88
S27	Supporting information - informative (Deep River)	87
S24	Supporting information - informative (Deep River)	86
T26	Central idea - poem (Mouse)	84
T13	Central idea - narrative (Simon)	82
S13	Supporting information - narrative (Arnitoo)	82
T32	Central idea - informative (Deep River)	81
R11	Relationship - narrative (Broken Window)	81
R25	Supporting information - informative (Sprouts)	79
R24	Cause - informative (Sprouts)	79
-----PANEL STANDARD	-------------DESIRABLE---------------------------------	79%
R14	Supporting information - narrative (Broken Window)	78
T16	Central idea - narrative (Simon)	77
R26	Sequence - informative (Sprouts)	76
T19	Supporting information - narrative (Rabbit)	76
R28	Cause - social studies (Nanuk)	75
T29	Relationship - informative (Deep River)	75
R13	Sequence - narrative (Broken Window)	75
S22	Central idea - poem (Mouse)	74
R27	Sequence - informative (Sprouts)	74
S29	Relationship - natural science (Foxes)	73
T11	Cause - narrative (Simon)	73
S28	Relationship - difference - natural science (Foxes)	72
R22	Central idea - poem (Mouse)	71
T31	Supporting information - informative (Deep River)	68
S15	Supporting information - narrative (Arnitoo)	65
-----PANEL STANDARD	-------------ACCEPTABLE---------------------------------	65%
S25	Supporting information - informative (Deep River)	64
T30	Supporting information - informative (Deep River)	59
R21	Central idea - poem (Mouse)	58
S26	Supporting information - informative (Deep River)	57

Mean Performance------------------ 75.2%

PANEL JUDGEMENT: Very Satisfactory (4)

These items deal with material which is explicitly presented in the passage; further, they would qualify as "textually explicit" in the Pearson and Johnson taxonomy--both question and response information are given within a single sentence in the text. Items S25 and S26, however, pose a more difficult task for students; in both cases, a large proportion of students chose a response which was given in the passage, but which was not relevant to the question. Item S27 was apparently much easier to deal with, as only one of the response options could be located in text. For this passage, student performance on literal comprehension was consistently lower whenever students were required to discriminate between options which could be located in the text.

Interpretation Panelists judged overall student performance on the literal comprehension items to be Very Satisfactory, with the mean percent correct of 75.2% comparing favourably with the "acceptable" standard of 65%. Panelists concluded that B.C. grade 4 students are clearly able to deal with literal interpretation of the stimulus materials presented in this survey.

3.2.3 Inferential and Critical Comprehension

At grade 4, 27 items which addressed inferential and critical comprehension were assigned to Domain 3. These items were designed to invoke processes such as synthesis, translation, analysis and evaluation, and dealt with inferring central ideas, making predictions and generalizations, drawing conclusions, inferring relationships and evaluating information.

Table 3.7 presents item-level results along with the Panel standards for this domain. Student performance exceeded the Panel's "desirable" standard of 76% for 11 of the 27 items assigned to this domain; 9 items fell between "acceptable" and "desirable;" and 7 were below the "acceptable" standards of 63%. Examination of Table 3.7 suggests that variations in performance level cannot simply be attributed to variations in passage objective, although there does appear to be a tendency toward weaker performance on items requiring evaluative processes such as distinguishing between relevant and irrelevant information or recognizing purpose. Two such items are presented below:

R12 How do we know that Jim Parker, the patrolman, jumped to conclusions?

%		
60	*A.	He accused Ted of breaking the window before he knew all of the facts.
4	B.	He liked Mike.
7	C.	He didn't trust young boys.
12	D.	He was a patrolman and Captain Lake was his commanding officer.
16	E.	I don't know.

Table 3.7
Provincial Results for Grade 4: Domain 3, Inferential/Critical Comprehension

Item Number	Description	Percent Correct
T14	Conclusion - narrative (Simon)	90
R20	Conclusion - poem (Mouse)	87
S14	Central idea - narrative (Arnitoo)	86
S21	Generalization - poem (Mouse)	86
S20	Central idea - poem (Mouse)	85
S16	Cause - narrative (Arnitoo)	84
T12	Prediction - narrative (Simon)	83
S32	Purpose - natural science (Foxes)	82
R15	Cause - narrative (Broken Window)	79
T28	Cause - poem (Mouse)	79
R30	Generalization - social studies (Nanuk)	77
-----PANEL STANDARD	-------------DESIRABLE-----------------------------------	76%
R16	Generalization - narrative (Broken Window)	75
S23	Central idea - poem (Mouse) (R23)	73
R32	Purpose - social studies (Nanuk)	73
T27	Central idea - poem (Mouse)	70
R31	Generalization - social studies (Nanuk)	69
T20	Relationship - narrative (Rabbit)	69
T21	Source - narrative (Rabbit)	68
R23	Central idea - poem (Mouse) (S23)	67
T25	Central idea - poem (Mouse)	67
-----PANEL STANDARD	-------------ACCEPTABLE----------------------------------	63%
R12	Relevant information - narrative (Broken Window)	60
R29	Conclusion - social studies (Nanuk)	59
S11	Conclusion - narrative (Arnitoo)	58
T15	Conclusion - narrative (Simon)	56
S30	Relevant - natural science (Foxes)	50
T18	Purpose - narrative (Rabbit)	41
S31	Prediction - natural science (Foxes)	41

Mean Performance--------------------- 70.9%

PANEL JUDGEMENT: Very Satisfactory (4)

T18 What does the story try to explain?

%		
41	*A.	why rabbits look the way they do today.
26	B.	why travellers should be careful.
13	C.	why man and rabbit are friends.
12	D.	why rabbits are afraid of people.
7	E.	I don't know.

For item R12, a relatively large proportion of students selected "I don't know," in effect, declining to attempt the task. Of those who selected an incorrect response, the largest group chose D, an option which is consistent with the information presented in the story, but not relevant to the question. Results for T18, where students were asked to identify the purpose of a legend, suggests a different problem: most of the students who selected an incorrect response chose the one option expressed as a "moral," failing to recognize the story's focus on the rabbit and his appearance. For these students, the problem may well have more to do with background knowledge than with reasoning. Johnston (1983) has suggested that reasoning, rather than being a unitary ability, involves two sets of strategies. The first of these has to do with helping the reader construct a model of the meaning of the text using information available both in the text and from the reader's previous experiences. The second set of strategies are those by which readers monitor their progress toward understanding the text, detecting lapses in comprehension, and initiating strategies to overcome these. For the 26% of student who chose option B in item T18, the failure appears to be with the first set of strategies--these students have contructed an inappropriate model, based, at least in part, on the expectation that stories are written "to teach a lesson." Students found items which asked them to identify the purpose of informative passages much easier. Additionally they performed well on items which required them to infer causal relationships or to predict subsequent events in narrative passages.

Overall, the Panel judged performance in this domain to be Very Satisfactory, with mean performance of 70.9% exceeding the Panel's "acceptable" standard of 63%. Panelists noted student competence in dealing with literary materials; overall, they felt that items which fell below the "acceptable" level required relatively sophisticated strategies which many grade 4 students have yet to attain.

3.2.4 Locates and Uses Information

At grade 4, 33 items were assigned to three objectives within Domain 4, Locates and Uses Information. Collectively, these items deal with locating and using information which appears in formats other than connected discourse. The items are designed to elicit skills such as classifying and sequencing; in many cases, students must recognize subordinate and superordinate relationships.

Two of the objectives within this domain deal with print sources; the distinction between these objectives is somewhat arbitrary:

Objective 4.1 Locates information using standard formats; 12 items required students to interpret information provided in a newspaper index, a table of contents, and a library card.

Objective 4.2 Uses information provided in standard formats; 9 items required students to answer questions about a glossary, a menu, and a "spending diary."

Objective 4.3 related specifically to pictorial material; 12 items required students to derive information from pictures which depicted pioneer life in Canada.

Table 3.8 presents item-level results and panel standards for Objective 4.1. Student performance exceeded the Panel's "desirable" standard for two items, both related to the library card; performance fell between "acceptable" and "desirable" for nine items, and below "acceptable" for one item. Items associated with the table of contents were somewhat more likely to cause difficulty for students than were other items. A table of contents was provided, followed by questions designed to elicit information regarding such social studies units as living in the desert, in plains, in mountainous areas, and so on. Items S33 and S35 are shown below:

S33 On which page would you begin to find out about living in the deserts of Asia?

%		
12	A.	page 45
4	B.	page 53
73	*C.	page 61
3	D.	page 67
3	E.	I don't know.
5	omitted	

S35 What would most likely be the best title for a set of notes on Unit 2?

%		
63	*A.	Deserts of the World
10	B.	North American Deserts
5	C.	African Deserts
10	D.	The Earth We Live On
6	E.	I don't know.
6	omitted	

For item S33, the most attractive distractor, A, gives the first page number for the unit on deserts, but that chapter is associated with North American deserts. Item S35 presents a somewhat different and, apparently, more difficult task: in order to respond correctly, students must be able to generalize--that is, synthesize existing knowledge to arrive at the correct answer. It is interesting to note that equal proportions of students focused on distractors superordinate and subordinate to Unit 2: 10% selected "North American Deserts," a chapter heading within Unit 2; an equal proportion chose "The Earth We Live On," the introductory Unit 1 title.

Table 3.8
Provincial Results for Grade 4: Objective 4.1,
Locates Information

Item Number	Description	Percent Correct
T36	library card	87
T34	library card	82
-----PANEL STANDARD-------------	DESIRABLE----------------------------------	78%
R34	classified index - newspaper	74
S33	table of contents - social studies	73
R35	classified index - newspaper	72
T35	library card	72
S36	table of contents - social studies	71
R36	classified index - newspaper	70
R33	classified index - newspaper	68
S34	table of contents social studies	67
T33	library card	66
-----PANEL STANDARD-------------	ACCEPTABLE---------------------------------	65%
S35	table of contents - social studies	63

Mean Performance--------------------- 72.1%

PANEL JUDGEMENT: Very Satisfactory (4)

The Interpretation Panel judged student performance on this objective to be Very Satisfactory; mean performance of 72.1% compared favourably with the "acceptable" standard of 65%.

Table 3.9
Provincial Results for Grade 4: Objective 4.2, Uses Information

Item Number	Description	Percent Correct
S18	Spending Diary	92
R17	Glossary	90
S17	Spending Diary	90
S19	Spending Diary	90
T23	Menu	87
T24	Menu	86
R18	Glossary	85
-----PANEL STANDARD	------------DESIRABLE----------------------------------	85%
T22	Menu	76
-----PANEL STANDARD	------------ACCEPTABLE---------------------------------	72%
R19	Glossary	67

Mean Performance------------------- 84.8%

PANEL JUDGEMENT: Strong (5)

Provincial results for Objective 4.2 are given in Table 3.9, along with Interpretation Panel standards for "acceptable" and "desirable." Performance on seven of nine items exceeded the "desirable" standard of 85%. Clearly, students experienced little difficulty with the formats provided. They found the "Spending Diary" (a simulated one-week record of a child's expenditures) particularly easy; as well, items associated with a Drive-In Menu posed no serious difficulties. The glossary consisted of a one-page glossary-format entry entitled "Fossil Facts and Meanings." Students had no difficulty with items R17 and R18 which required them to read the entries and correctly identify dinosaurs associated with given traits. They had more difficulty, however, with item R19:

R19 What was a hatchling dinosaur?

%		
13	A.	a dinosaur egg.
67	*B.	a baby dinosaur.
5	C.	an adult dinosaur.
4	D.	a dinosaur about the size of a chicken.
9	E.	I don't know.

The definition given for hatchling dinosaur read, "A dinosaur that had recently emerged from its egg;" 13% chose "a dinosaur egg," while 9% selected "I don't know." It seems likely that these students had difficulty interpreting the words "recently emerged," while those who chose options C or D had difficulty with the glossary format.

Overall, the Interpretation Panel found student performance on this set of items encouraging, with mean performance virtually coincidental with the "desirable" standard of 85%; the Panel assigned a rating of Strong (5 on a 5-point scale) to performance on Objective 4.2.

Table 3.10
Provincial Results for Grade 4: Objective 4.3,
Interprets Pictures

Item Number	Description	Percent Correct
R37	Making pioneer toys	87
T39	Outdoor oven	87
S37	Pioneer meal	86
T37	Outdoor oven	84
-----PANEL STANDARD	------------DESIRABLE-------------------------------	82%
S39	Pioneer meal	81
S38	Pioneer meal	80
T38	Outdoor oven	80
R40	Making pioneer toys	79
R39	Making pioneer toys	78
T40	Outdoor oven	78
R38	Making pioneer toys	74
-----PANEL STANDARD	------------ACCEPTABLE-------------------------------	69%
S40	Pioneer meal	63

Mean Performance------------------- 79.8%

PANEL JUDGEMENT: Very Satisfactory (4)

The final objective in Domain 4 dealt with pictorial material. The 1984 Advisory Committee assigned a very high priority to this objective. Stimulus material was drawn from the content area of social studies, where ability to derive information from pictures is central to many learning activities in the elementary grades. Item-level results and panel standards are presented in Table 3.10: performance on four items exceeded the "desirable" standard; on seven items it fell between "acceptable" and "desirable;" and on one item, below "acceptable." It should be noted that the picture and its associated items appeared at the end of each achievement survey; consequently, student results are likely to be slightly deflated as between 6 and 8% of students were unable to complete the survey within the time allotted. For the most part, students who attempted the items had little difficulty in selecting the correct answer. Item R38 presented a minor scoring problem--an unanticipated ambiguity in the graphic made two responses defensible. For the provincial results and interpretation, these were both keyed as correct responses. Item S40 was relatively difficult for students:

S40 Where did the people in this picture most likely live?

%	
63	*A. on a pioneer farm.
1	B. in a large city.
17	C. in the far north.
4	D. on a desert island.
6	E. I don't know.
7	omitted

A relatively high proportion either were unfamiliar with the word "pioneer," or ignored the cues provided by the pictured family's clothing. The distractor "in the far north" may also have appealed to those students who see living conditions in the far north as being equivalent to those in pioneer times.

The Panel assigned a rating of Very Satisfactory (4 on a 5-point scale) to student performance on Objective 4.3. Mean student performance of 79.8% compared favourably with the Panel's "acceptable" standard of 69%, and approached the "desirable" standard of 82%.

When the Interpretation Panel considered Domain 4, Locates and Uses Information, an overall rating of Very Satisfactory was assigned. Panelists felt that grade 4 students had demonstrated a relatively high level of competence in dealing with functional and reference formats, and with pictorial stimuli.

3.2.5 Summary: Grade 4 Achievement Survey

The Interpretation Panel judged overall grade 4 results to be Very Satisfactory--indicative of a primary reading program with many basic strengths. Given these results, Panelists suggested that the program--and concomitantly, student achievement--could move toward excellence through an emphasis on higher levels of comprehension, through increased diversity in support materials for the Language Arts program, and through increased integration of reading, writing, speaking, and listening.

3.3 Achievement Survey Results: Grade 7

As described in Chapter 2, the grade 7 achievement survey tests included 120 multiple-choice items, representing five domains; these items were systematically assigned to Forms R, S, and T, to ensure that difficulty level, domain coverage, and task requirements were equivalent across forms.

3.3.1 Word Meaning

At grade 7, 24 items were included in Domain 1, Understands Words and Expressions: 9 items required students to select the appropriate meaning for frequently occurring words, given minimal context; 9 items required the use of context clues; and 6, the selection of the appropriate meaning--within the context given--of words with multiple meanings. In this domain, interpretation panelists established standards and judged performance for each of the three objectives, before considering domain-level performance.

Table 3.11
Provincial Results for Grade 7: Objective 1.1,
Recognizes Frequently Occurring Words

Item Number	Description	Percent Correct
R3	verify	82
-----PANEL STANDARD	DESIRABLE	82%
T3	independent	80
S3	interior	78
R1	frail	76
T1	precipitation	73
T2	era	70
S1	parallel	69
-----PANEL STANDARD	ACCEPTABLE	69%
R2	diplomat	54
S2	optional	50

Mean Performance------------------- 70.2%

PANEL JUDGEMENT: Very Satisfactory (4)

Provincial results for Objective 1.1 are shown in Table 3.11, along with Panel standards for "acceptable" and "desirable" levels of performance. As in previous tables, items have been rank-ordered according to percent of students who answered correctly; panel standards have been inserted using dotted lines. For this objective, words were presented in a sentence offering minimal context, as shown in item R1 below:

R1 He was very frail.

The word frail means ....

%		
4	A.	mean.
76	*B.	weak.
7	C.	old.
5	D.	dishonest.
07	E.	I don't know.

Seven of the 9 items equalled or exceeded the Panel's standard for "acceptable." The distribution of p-values is negatively skewed, resulting in a mean of 70.2, somewhat lower than the median of 73. Interpretation Panelists attributed relatively weak performance on item R2 to two factors: unfamiliarity of the word diplomat, and failure of the options given--thief, graduate, professor, and statesman--to provide an appropriate synonym. In view of these factors, they rejected the item as a valid representation of the objective, and recommended that it be deleted from further tests at this level. Overall, they were less critical of S2, shown below:

S2 Attendance was optional.

The word optional means ....

%		
29	A.	open to the public.
11	B.	required.
6	C.	counted.
50	*D.	not required.
4	E.	I don't know.

While some panelists argued that distractor A represented an acceptable definition for optional, most disagreed, and many suggested the item be repeated on future assessments.

Three items from the 1980 grade 8 achievement surveys were included in Objective 1.1 for grade 7 students in 1984. Comparative results are shown in Table 3.12.

Table 3.12
Grade 7, Objective 1.1, Recognizes Frequently Occurring Words:
Comparison with 1980 Grade 8 Performance

Item Number	Description	Grade 8 1980 adj-p	Grade 8 1980 raw-p	Grade 7 1984 raw-p
R3	verify	77	63	82
T3	independent	76	61	80
S3	interior	76	62	78
	Mean	76.3	62	80

The interpretation of these change data is problematic for two reasons: first, the comparison of 1984 grade 7 performance with 1980 grade 8 performance is difficult to defend on logical grounds; second, a serious missing data problem in the 1980 data makes it extremely difficult to estimate "true" 1980 performance. The 1980 assessment reports rely on adjusted p-values; because a relatively high proportion of students were not able to complete the surveys in the time allotted, reported p-values for each item were based on the number of students who attempted and completed the item, rather than on the number of students who wrote the test. Re-analyses of the 1980 data indicated that the reported p-values were often as much as 15% greater than those calculated on the total number of students writing the test.

The 1984 results are unaffected by missing data; p-values are based on the total number of students writing. While the direction of change indicated in Table 3.12 is constant, regardless of which set of 1980 values is used, the magnitude varies greatly. For items associated with Objective 1.1, then, 1984 grade 7 performance exceeds 1980 grade 8 performance by an average of at least 4%.

The Interpretation Panel judged performance on Objective 1.1 to be Very Satisfactory in the light of their standards and comparison data from 1980.

Provincial results and panel standards for Objective 2.2, Derives Meaning from Context, are shown in Table 3.13. As shown in Table 3.13, student performance exceeded panel expectations: 7 of 9 items were well above the "acceptable" level; one exceeded "desirable;" 4 were only marginally below "desirable." Again, a negatively skewed distribution produced a mean of 72.8, somewhat below the median p-value of 77. Two items were extremely difficult; only slightly more than half of the students selected the keyed response hopeful for sanguine, or plan for proposition. The Panel felt that plan was not an accurate synonym for proposition; the Contract Team concurs. Consequently, item T35 was ignored in subsequent Panel deliberations. Item R6--sanguine--was a comparison item with grade 10; it is not surprising, then, that grade 7 students found it relatively difficult.

Items associated with this objective presented contextual clues to words which are not in the reading vocabularies of most grade 7 students. Item S6 is given below:

S6 **We were surprised to see them. We did not know they were in France; our meeting was fortuitous.**

The word fortuitous most likely means ....

%		
2	A.	in a group of four.
5	B.	in far places.
78	*C.	accidental.
8	D.	well-planned.
6	E.	I don't know.

The Interpretation Panel judged grade 7 performance on Objective 1.2 as Strong; grade 7 students, they felt, had demonstrated a relatively high degree of proficiency in determining word meaning from context.

Table 3.13
Provincial Results for Grade 7: Objective 1.2,
Derives Meaning From Context Clues

Item Number	Description	Percent Correct
R7	asafedita in context	93
-----PANEL STANDARD	------------DESIRABLE----------------------	80%
T6	rejoinder in context	78
S8	grazing vegetation in context	78
S6	fortuitous in context	78
S7	livery in context	77
R37	forfeit in context	75
T7	averred in context	70
-----PANEL STANDARD	--------------ACCEPTABLE----------------------	63.5%
T35	proposition in context	53
R6	sanguine in context	53

Mean Performance-------------------- 72.8%

PANEL JUDGEMENT: Strong (5)

Provincial results and panel standards for Objective 1.3, Discriminates among Multiple Meanings, are shown in Table 3.14, along with results for the 1980 grade 8 population. All 6 items appeared on the 1980 grade 8 surveys.

Table 3.14
Provincial Results for Grade 7: Objective 1.3,
Discriminates Among Multiple Meanings

Item Number	Description	1980 Gr. 8 adj p	1980 Gr. 8 raw p	1984 Gr. 7 % Correct
-----PANEL STANDARD	-------------DESIRABLE	------------	------------	------------ 79%
R5	primed in context	77	68	78
T4	telltale in context	74	74	74
S5	warrant in context	66	59	70
-----PANEL STANDARD	-------------ACCEPTABLE	------------	------------	------------ 66%
S4	effects in context	63	63	64
T5	magazine in context	60	54	63
R4	counts in context	56	56	55

Mean Performance(1984)-------------- 67.3%

PANEL JUDGEMENT: Satisfactory (3)

Three items exceeded the panel's standard for acceptable performance; the mean p-value of 67.3% and the median, 67% were very close to the panel's standard of 66%. Panelists were somewhat critical of the items related to this objective which offered dictionary entries as response alternatives as shown in item S4, below:

S4 Turning on a light can have numerous effects; one is giving off light.

Here effects means ....

%		
11	A.	the quality of being operative.
64	*B.	visible results.
05	C.	basic meanings.
16	D.	distinctive impressions.
03	E.	I don't know.

When grade 8 performance in 1980 is considered, it is clear that the current grade 7 population is at least as skilled in discriminating among multiple meanings. Grade 8 performance in 1980 was judged Very Satisfactory by the Interpretation Panel, although Tuinman and Kendall viewed the results as "a cause for some concern" (1980a, p.69).

The 1984 grade 7 Interpretation Panel rated student performance on this set of items as Satisfactory. It is interesting to note that performance which was judged Very Satisfactory for grade 8 students in 1980, was considered only Satisfactory for grade 7 students in 1984. Clearly, there has been no deterioration in standards.

When the three objectives were considered as a domain, the panel rated overall performance as Very Satisfactory.

3.3.2 Literal Comprehension

At grade 7, Domains 2, 3 and 4 involved literal, inferential and critical comprehension, respectively. The stimulus passages for the comprehension objective included:

- literary: narrative - 3 passages
- literary: poetry - 3 passages
- informative: social studies - 3 passages
- informative: science - 3 passages
- persuasive: 1 passage

One of the informative passages appeared on two different forms of the test, as did the persuasive passage; each test form thus included five stimulus passages for comprehension items. One of the literary narrative passages is given as Figure 3.3.

Domain 2, Literal Comprehension, included 24 items at grade seven. These items required students to indicate understanding of main ideas, of sequence, of relationships, and of supporting information when these are explicitly stated in text. The Interpretation Panel considered items within this domain as a single set, rather than as representing discrete objectives; thus, overall acceptable and desirable standards were established for the domain. Table 3.15 presents item-level results along with panel standards.

Student performance exceeded the panel standard for "desirable" on 8 of the 24 items. Three of these items dealt with key or central ideas in the three poems presented; 4, with recognition of relationships in informative material. Nine items fell between the "acceptable" and "desirable" standards; five of these required recognition of causal relationships across a variety of stimulus material.

Seven items were below the panel's "acceptable" standard; with one exception, these required identification of relevant information or of sequence of events. The Interpretation Panel noted concern with performance on the two items which required recognition of sequence. Item R35, associated with "The Dinner Party" (see Figure 3.4) is given below:

THE DINNER PARTY

The country is India. A colonial offical and his wife are giving a large dinner party. They are seated with their guests--army officers and government attaches and their wives, and a visiting American naturalist--in their spacious dining room, which has a bare marble floor, open rafters, and wide glass doors opening onto a veranda.

A spirited discussion springs up between a young girl who insists that women have outgrown the jumping-on-a-chair-at-the-sight-of-a-mouse era and a colonel who says that they haven't.

"A woman's unfailing reaction to any crisis," the colonel says, "is to scream. And while a man may feel like it, he has that ounce more of nerve control than a woman has. And that last ounce is what counts."

The American does not join in the argument but watches the other guests. As he looks, he sees a strange expression come over the face of the hostess. She is staring straight ahead, her muscles contracting slightly. With a slight gesture she summons the native boy standing behind her chair and whispers to him. The boy's eyes widen, and he quickly leaves the room.

Of the guests, none except the American notices this or sees the boy place a bowl of milk on the veranda just outside the open doors.

The American comes to with a start. In India, milk in a bowl means only one thing--bait for a snake. He realizes there must be a cobra in the room. He looks up at the rafters--the likeliest place--but they are bare. Three corners of the room are empty and in the fourth the servants are waiting to serve the next course. There is only one place left--under the table.

His first impulse is to jump back and warn the others, but he knows the commotion would frighten the cobra into striking. He speaks quickly, the tone of his voice so arresting that it sobers everyone.

"I want to know just what control everyone at this table has. I will count three hundred--that's five minutes--and not one of you is to move a muscle. Those who move will forfeit fifty rupees. Ready!"

The twenty people sit like stone images while he counts. He is saying "...two hundred and eight..." when, out of the corner of his eye, he sees the cobra emerge and make for the bowl of milk. Screams ring out as he jumps to slam the veranda doors safely shut.

"You are right, Colonel!" the host exclaims. "A man has just shown us an example of perfect control."

"Just a minute," the American says, turning to his hostess. "Mrs. Wynnes, how did you know that cobra was in the room?"

A faint smile lights up the woman's face as she replies: "Because it was crawling across my foot."

Figure 3.4 Literary Narrative Passage from Grade 7 Surveys

R35 Which one of the following events happened first in the story?

%
25 A. The boy's eyes widened.
14 B. The native boy placed a bowl of milk on the veranda.
06 C. The American counted to three hundred.
51 *D. The snake crawled across Mrs. Wynne's foot.
03 E. I don't know.

Results for this item suggest that many students equate the placement of information with actual time sequence. In the case of item R35, 25% of students chose A, information which was presented first. It is perhaps even more discouraging to note that 14% chose option B, which neither occurred first, nor was presented first.

Students were only slightly more successful in dealing with item T10 below, which was based on an informative passage about Chief Dan George:

T10 Which one of the following happened first in Chief Dan George's life?

%
63 *A. Dan George married Amy Jack.
20 B. Chief Dan George gave the centennial speech.
6 C. A log smashed into Dan George.
8 D. Dan George was elected chief.
3 E. I don't know.

Again, many students selected the first piece of information presented in the passage, although events in Dan George's life are explicitly ordered later in the passage.

It seems clear, in retrospect, that both items discussed above call for inferential rather than literal comprehension; this does not, however, make the results less of a concern. The ability to follow the sequence of a narrative is central to understanding both literary and informative material. It is not possible to discern from the results whether students misunderstood the requirements of the items, or whether they failed to grasp the sequence of events presented in the passages. That is, if students were asked to re-tell or summarize the passages, would they present an accurate sequence of events? Difficulties with sequence were unanticipated at this grade level; in view of the apparent difficulty of such tasks, the Interpretation Panel strongly suggested that sufficient sequencing tasks be included in future assessment surveys to examine the nature and extent of student problems.

Table 3.15
Provincial Results for Grade 7: Domain 2, Literal Comprehension

Item Number	Description	Percent Correct
T12	Central idea - poem (Mouse)	95
R11	Cause - social studies (Working Children)	94
S20	Central idea - poem (Suspended)	93
R20	Central idea - poem (Catnip)	92
T11	Supporting information - social studies (How Long...)	90
R26	Relationship - difference - natural science (Foxes)	90
R9	Cause - social studies (Working Children)	87
T31	Cause - science (Caving)	86
-----PANEL STANDARD	-------------DESIRABLE---------------------------------	85%
S10	Cause - natural science (Prairie Dogs)	83
S40	Cause - narrative (Somebody's Son)	83
T8	Central idea - social studies (How Long Have I...)	82
R10	Supporting information - social studies (Work. Ch.)	82
T9	Cause - social studies (How Long Have I...)	81
S9	Cause - natural science (Prairie Dogs)	78
S14	Supporting information - social studies (Work. Ch.)	75
S15	Supporting information - social studies (Work. Ch.)	74
S36	Cause - narrative (Somebody's Son)	72
-----PANEL STANDARD	-------------ACCEPTABLE--------------------------------	72%
R30	Supporting information - persuasive (Children's Sp.)	71
T36	Supporting information - narrative (Dan)	67
S34	Supporting information - science (Caving)	66
T34	Supporting information - science (Caving)	66
T10	Sequence - social studies (How Long Have I...)	63
R31	Cause - persuasive (Children's Sports)	60
R35	Sequence - narrative (Dinner Party)	51

Mean Performance------------------- 78.4%

PANEL JUDGEMENT: Very Satisfactory (4)

Overall, the Panel judged performance on literal comprehension to be Very Satisfactory, with student mean performance exceeding the "acceptable" standard by more than 6%.

3.3.3 Inferential Comprehension

Twenty-seven items were assigned to Domain 3, Inferential Comprehension, at grade 7. These items required students to infer central ideas, make predictions and generalizations, draw conclusions, and infer relationships. The Interpretation Panel considered the items as a single unit and established overall acceptable and desirable standards for the domain. Table 3.16 presents item-level results along with panel standards. Student performance equalled or exceeded the panel standard for "desirable" on 8 items; 7 of these required students to infer a central idea, or a causal relationship. For seven items (one of which appeared on two forms of the survey) student performance was below the panel acceptable level. Three of these were associated with literary narrative passages; two with a persuasive passage. Two items associated with "The Dinner Party" (see Figure 3.3) are given below:

R38 Why did a faint smile light up Mrs. Wynnes' face as she replied, "Because it was crawling across my foot."?

%		
9	A.	She had just won fifty rupees from every guest in the room.
12	B.	The cobra had tickled her feet.
68	*C.	She proved that the Colonel was wrong about women.
4	D.	The snake had scared away all the mice.
4	E.	I don't know.

R39 Why did the American slam the veranda door?

%		
77	*A.	to keep the cobra out.
4	B.	to keep the insects out.
7	C.	to keep people from leaving.
5	D.	to keep the servants from hearing the conversation.
3	E.	I don't know.

It is interesting to note the difference in student performance on these two items. Both items require students to infer motivation; students who cannot make these two inferences have an imperfect understanding of the story. The second item, however, refers to action and is somewhat more direct. Students performed relatively well on this item, particularly when its placement near the end of the survey is considered. Item R38, however, requires a more subtle understanding; students found it more difficult, with the 12% who chose option B preferring a literal response to an inferred conclusion.

Overall, the Panel judged performance on inferential comprehension Satisfactory, concluding that, generally, grade 7 students are able to make appropriate inferences from material presented.

Table 3.16
Provincial Results for Grade 7: Domain 3, Inferential Comprehension

Item Number	Description	Percent Correct
T14	Central idea - poetry (Mouse)	92
T13	Generalization - poetry (Mouse)	90
S12	Cause - natural science (Prairie Dogs)	86
S21	Central idea - poetry (Suspended)	84
S11	Conclusion - natural science (Prairie Dogs)	84
T25	Central idea - persuasive (Children's Sports)	83
S33	Cause - science (Caving)	83
T40	Central idea - narrative (Dan)	82
-----PANEL STANDARD	------------DESIRABLE-------------------------------	82%
S19	Central idea - poetry (Suspended)	81
S35	Generalization - science (Caving) (T33)	79
T33	Generalization - science (Caving) (S35)	79
R39	Cause - narrative (Dinner Party)	77
T39	Cause - narrative (Dan)	75
R21	Central idea - poetry (Catnip)	74
R8	Central idea - social studies (Working Children)	73
T37	Generalization - narrative (Dan)	73
T28	Central idea - persuasive (Children's Sports)	71
R19	Generalization - poetry (Catnip)	71
S39	Relationship - similarity - narrative (S's Son)	69
-----PANEL STANDARD	------------ACCEPTABLE-------------------------------	69%
R38	Cause - narrative (Dinner Party)	68
S18	Central idea - poetry (Suspended)	67
R36	Cause - narrative (Dinner Party)	63
S37	Generalization - narrative (Somebody's Son)	62
R32	Central idea - persuasive (Children's Sports)	52
T27	Cause - persuasive (Children's Sports) R34	51
R34	Cause - persuasive (Children's Sports) T27	48
R28	Prediction - natural science (Foxes)	48

Mean Performance------------------- 72.8%

PANEL JUDGEMENT: Satisfactory (3)

3.3.4 Critical Comprehension

At grade 7, 15 items were assigned to Domain 4, Critical Comprehension. These items required students to recognize the author's purpose, to evaluate conclusions, and to distinguish between fact and opinion, or between relevant and irrelevant information. Items were associated with literary, informative, and persuasive passages.

Table 3.17
Provincial Results for Grade 7: Domain 4,
Critical Comprehension

Item Number	Description	Percent Correct
R29	Recognizes purpose - natural science (Foxes)	92
-----PANEL STANDARD	------------DESIRABLE---------------------------------	84%
T29	Relevant/irrelevant - persuasive (Children's Sports)	82
R12	Recognizes purpose - social studies (Working Children)	81
T32	Recognizes purpose - science (Caving)	80
S13	Fact/opinion - natural science (Prairie Dogs)	76
S16	Evaluates information - social studies (Work. Child.)	73
R27	Relevant/irrelevant - natural science (Foxes)	72
S17	Fact/opinion - social studies (Working Children)	70
S32	Relevant/irrelevant - science (Caving)	70
-----PANEL STANDARD	------------ACCEPTABLE--------------------------------	69.5%
T26	Relevant/irrelevant - persuasive (Children's Sports)	69
S38	Recognizes attitude - narrative (Somebody's Son)	68
T30	Recognizes purpose - persuasive (Children's Sports)	58
R33	Evaluates information - persuasive (Children's Sp.)	58
R40	Fact/opinion - narrative (Dinner Party)	55
T38	Fact/opinion - narrative (Dan)	52

Mean Performance------------------- 70.4%

PANEL JUDGEMENT: Satisfactory (3)

Table 3.17 presents panel standards and item-level results for this domain. Performance on one item exceeded the "desirable" standard, 8 items fell between "acceptable" and "desirable," while 6 items were below the "acceptable" standard.

Many panel members were concerned about student performance on items which required that students distinguish between fact and opinion. These four items are reproduced below:

S13 Which one of the following tells you a fact about prairie dogs?

%		
2	A.	They are very slow moving.
7	B.	There are too many of them.
76	*C.	They eat only annual plants.
12	D.	They are very friendly and cute.
3	E.	I don't know.

S17 Which one of the following statements is an opinion about child labour?

%		
10	A.	Children worked in hot, sweaty places.
8	B.	Children were often beaten.
9	C.	Children worked six days a week.
70	*D.	Child labour should be against the law.
3	E.	I don't know.

R40 Which one of the following is clearly a statement of opinion? (see Figure 3.4)

%		
14	A.	A bowl of milk attracts a cobra.
55	*B.	A man has more "nerve-control" than a woman.
15	C.	Sudden movement and noise may frighten a cobra into striking.
10	D.	The likeliest place to find a cobra is in the rafters.
3	E.	I don't know.

T38 Which one of the following is a fact rather than an opinion?

%		
24	A.	Dan is too old.
10	B.	Dan is a great dog.
10	C.	Dan is worth his keep.
52	*D.	Dan is a collie.
2	E.	I don't know.

Although the items above are each associated with a passage, they are not passage-dependent; that is, the correct answer can be selected without reference to the passage. Results for these items suggest that many grade 7 students are unable to distinguish between statements of fact and statements of opinion; they apparently have not learned to recognize cues such as "too," "great," "very," and "should." Several panelists suggested strongly that future assessments systematically include fact/opinion questions at this grade level.

Within this domain, students performed relatively well on questions which related to the purpose of informative passages, and to the distinction between relevant and irrelevant material. Overall, the panel rated performance as Satisfactory, with mean student performance (70.3%) virtually coincidental with the Panel "acceptable" standard of 69.5%.

3.3.5 Locates and Uses Information

At grade 7, Domain 5 included the following three objectives:

1. Nine items were assigned to Objective 5.1, Locates and Organizes Print Information. These items required students to assign information to outline headings or to identify probable location of material using a table of contents.

2. Nine items were assigned to Objective 5.2, Uses Standard References: Dictionary. Six items required students to select from alternate definitions; three involved the use of guide words and were repeated from the 1980 reading assessment.

3. Twelve items were assigned to Objective 5.3, Interprets Maps, with a street map of downtown Edmonton and a road map for a small town as stimulus material.

Table 3.18 presents item-level results and panel standards for Objective 5.1. Students displayed little difficulty with this set of items: three items exceeded the "desirable" standard, and only one item fell below "acceptable." The Panel rated student performance as Strong, and concluded that, given the stimulus material presented, grade 7 students displayed a high level of competence in locating and organizing material.

Table 3.18
Provincial Results for Grade 7: Objective 5.1, Locates and Organizes Print Information

Item Number	Description	Percent Correct
S26	table of contents	94
S25	table of contents	90
R14	assign information to headings	88
-----PANEL STANDARD-------------DESIRABLE-------------------------------		87.5%
T19	assign information to headings	86
T20	assign information to headings	85
S27	table of contents	82
T18	assign information to headings	81
R15	assign information to headings	76
-----PANEL STANDARD-------------ACCEPTABLE------------------------------		72.5%
R13	assign information to headings	66

Mean Performance------------------- 83.1%

PANEL JUDGEMENT: Strong (5)

Table 3.19 contains item-level results and panel standards for items associated with dictionary use. Six of the nine items fell between "acceptable" and "desirable. Student performance was judged to be Satisfactory. A number of criticisms of the items were offered; many panelists felt that results reflected item quality rather than student competence.

In Table 3.20, 1984 grade 7 performance is compared with 1980 grade 8 performance. Results are virtually identical: each item shows a gain of 1% for 1984 grade 7 students. Grade 8 performance on this set of items was judged Satisfactory in 1980, as was grade 7 performance in 1984.

Table 3.19
Provincial Results for Grade 7: Objective 5.2, Uses Standard References: Dictionary

Item Number	Description	Percent Correct
S23	select definition for freeze	84
-----PANEL STANDARD	------------DESIRABLE--------------------------------	84%
S22	select definition for flake	82
R17	guide words	80
T15	select definition for ruffled	79
T16	select definition for ruffled	74
R16	guide words	70
R18	guide words	70
-----PANEL STANDARD	------------ACCEPTABLE--------------------------------	70%
S24	select definition for gentle	68
T17	select definition for rude	57

Mean Performance------------------- 73.8%

PANEL JUDGEMENT: Satisfactory (3)

Table 3.20
Grade 7, Objective 5.2: Comparison with 1980 Grade 8 Performance

Item Number	Description	Grade 8 1980		Grade 7 1984
		adj-p	raw-p	raw-p
R16	dictionary guide words	69	69	70
R17	dictionary guide words	78	78	79
R18	dictionary guide words	69	69	70
	Mean	72	72	73

Results for Objective 5.3, Interprets Maps, are shown in Table 3.21: 5 items exceeded the "desirable" standard, 3 items fell between "acceptable" and "desirable," and 4 items--one of which was repeated on two forms--fell below the "acceptable" standard. Students had little difficulty interpreting the street map of Edmonton; the road map for a small town posed more difficulty and was criticized by the Panel as being ambiguous and idiosyncratic, rather than adhering to a standard format. Student performance for this objective was judged Very Satisfactory; student mean performance (76.3%) compared favourably with the Panel's "acceptable" standard of 72%.

Table 3.21
Provincial Results for Grade 7: Objective 5.3,
Interprets Maps

Item Number	Description	Percent Correct
R22	street map of Edmonton	92
R23	street map of Edmonton	91
R24	street map of Edmonton	91
T22	road map	91
S30	road map	85
-----PANEL STANDARD-------------	DESIRABLE----------------------------------	84.5%
T24	road map	85
S29	road map	78
T23	road map	73
-----PANEL STANDARD-------------	ACCEPTABLE--------------------------------	72%
S31	road map	66
T21	road map	62
S28	road map	58
R25	street map of Edmonton	42

Mean Performance-------------------- 76.3%

PANEL JUDGEMENT: Very Satisfactory (4)

The Panel rated overall student performance on Domain 5 as Very Satisfactory. Panelists differed considerably, however, in their estimation of the importance of this domain of material: some felt that the Domain 5 items did not reflect important dimensions of reading competence and thus, were inappropriate for an assessment survey; others judged these items and the associated skills to be critical for students about to enter high school. Given this dichotomy among the educators, parents, and school board members who made up the grade 7 panel, it is not surprising that students reach the secondary grades with varying degrees of competence in research and study skills.

3.3.6 Summary of Grade 7 Results

The Interpretation Panel judged grade 7 student performance to be Very Satisfactory on three of the five domains assessed: Understands Words; Literal Comprehension; and Locates and Uses Information. Performance on items associated with higher level comprehension skills--inferential and critical comprehension--was considered Satisfactory.

A number of Panelists indicated some concern regarding student performance in two specific areas: recognizing a sequence of events in narrative materials, and distinguishing between statements of fact and opinion. They suggested that relevant items from the 1984 surveys be repeated in future assessments to assess changes in student performance, and, further, that an increased number of items representing these objectives be included in future surveys of grade 7 achievement.

Overall, achievement survey results at grade 7 provide evidence of a relatively successful basic reading program. It seems clear that attempts to move toward excellence will need to focus on higher level comprehension skills.

3.4 Achievement Survey Results: Grade 10

The grade 10 achievement survey instruments included 120 multiple choice items representing five domains; these items were systematically assigned to Forms R, S or T, to ensure that difficulty level, task requirements and domain coverage were equivalent across forms.

3.4.1 Understands Words and Expressions

At grade 10, 21 items were included in Domain 1, Understands Words and Expressions: 9 items required the use of context clues; 6 items required students to select from alternate meanings given a word in context; and 6 items required interpretation of figures of speech which occurred within the context of literary stimulus materials.

Table 3.22 presents provincial results fr[illegible]ective 1.1, Derives Meaning from Context Clues. As in previous and subseq[illegible] tables of this type, items have been rank-ordered according to the percent of students who answered correctly. Interpretation Panel standards for "acceptable" and "desirable"

Table 3.22
Provincial Results for Grade 10: Objective 1.1,
Derives Meaning from Context

Item Number	Description	Percent Correct
T5	fortuitous in context	92
R5	averred in context	85
S4	livery in context	83
R3	rejoinder in context	82
-----PANEL STANDARD	-------------DESIRABLE---------------------------------	78%
S5	sanguine in context	72
-----PANEL STANDARD	-------------ACCEPTABLE--------------------------------	64%
T4	potiche in context	62
S3	rorquals in context	51
R4	scissile in context	50
T3	yamen in context	49

Mean Performance-------------------- 69.6%

PANEL JUDGEMENT: Very Satisfactory (4) performance—established prior to examination of results--are shown by dotted lines. Mean performance for the objective, and the Panel's rating of student performance are shown at the bottom of the table.

Student performance exceeded the Panel's "desirable" standard on 4 of the 9 items, fell between "acceptable" and "desirable" on one item, and was below "acceptable" for 4 items. Stimulus words for this objective were selected on the basis of their unfamiliarity to most grade 10 students, according to standard word lists, and presented within the context of one to four sentences. It is interesting to note that students performed best when the words were presented in one or two sentences; performance was weaker when words were presented in slightly longer passages. Items S5 and T3 are shown below, with percent of students selecting each option given on the left:

S5 For tomorrow, we've planned a picnic. It would be great to have good weather for a change, but I'm not sanguine--it's rained all month.

The word sanguine probably means...

%		
5	A.	happy.
72	*B.	hopeful.
5	C.	prepared.
14	D.	discouraged.
4	E.	I don't know.

T3 We shuffled slowly into the yamen. The officials led the way. The architecture was interesting, not at all fitting for a bureaucratic establishment, yet the East has always had a flair for the unusual.

A yamen most likely is...

%		
7	A.	a small room.
13	B.	an office building.
49	*C.	a Chinese government building.
19	D.	a Japanese temple.
11	E.	I don't know.

Most students had little difficulty with S5; those who chose an incorrect response most often selected "discouraged," apparently ignoring the conjunction "but." Item T3 (originally devised for grade 12 students in 1980) proved much more difficult, although the correct answer can be derived from a few words: "...a bureaucratic establishment, yet the East..." It is somewhat discouraging to note that, even at grade 10, many students prefer "I don't know" to attempting a deductive response when faced with a relatively difficult task.

Most students who selected an incorrect response recognized the cue "East" and chose "a Japanese temple," ignoring two cues to the nature of the building: "officials" and "bureaucratic establishment." A further 13% ignored the cue "East," and apparently associated "officials" with an office building. It seems likely that many students at this level did not associate "bureaucratic" with government; the item poses a difficult task for such students--they must first derive a meaning for "bureaucratic."

The Interpretation Panel assigned a rating of Very Satisfactory (4 on a 5-point scale) to overall student performance on this objective; the mean of 69.6% for this set of items compared favourably with the Panel's "acceptable" standard of 64%.

Results for the second objective within Domain 1--Discriminates among Multiple Meanings--are presented in Table 3.23 along with Interpretation Panel standards for "acceptable" and "desirable." Student performance fell below the Panel's "acceptable" standard of 64% on 3 of the 6 items, and exceeded the "desirable" standard on only one item. For this objective, words with multiple meanings were presented in a sentence offering context clues; dictionary definitions of the word were offered as response options. For this grade level, then, items simulated the task students face in discriminating among alternate dictionary definitions. Two such items are given below:

S1 His application to his work made him an excellent student. Here application means...

%		
68	*A.	close attention.
13	B.	a request, as for a job.
13	C.	anything that is applied (put on or upon).
5	D.	the act of putting on or upon.
1	E.	I don't know.

S2 We will hire you, with the provision that you work seven days a week. Here provision means...

%		
20	A.	the act of supplying or fitting out.
50	*B.	a stipulation or qualification.
24	C.	a preparatory measure.
1	D.	a stock of necessary supplies.
5	E.	I don't know.

For item S1, it appears that many students chose a response by association rather than by deduction; thus, for option B associating "job" with "work" which appears in the item, and, for option C associating "applied" with the stimulus word "application." Students found item S2 extremely difficult; it may well be that the wording of the correct option "a stipulation or qualification" represented a reading task beyond the competence of many students at this level. Further, "qualification" is itself a word with alternate definitions, perhaps compounding the students' problems. It is interesting to note that options A and C were almost equally appealing as distractors; C would appear to offer the more logical choice.

The Interpretation Panel rated student performance on the items associated with multiple meanings as Marginally Satisfactory (2 on a 5-point scale). Mean student performance of 61.3% was somewhat below the Panel's "acceptable" standard of 64%.

Table 3.23
Provincial Results for Grade 10: Objective 1.2,
Discriminates among Multiple Meanings

Item Number	Description	Percent Correct
R1	primed in context	89
-----PANEL STANDARD	-------------DESIRABLE----------------------------------	78%
S1	application in context	68
T1	counts in context	64
-----PANEL STANDARD	--------------ACCEPTABLE-------------------------------	64%
T2	dissolution in context	51
S2	provision in context	50
R2	standard in context	46

Mean Performance-------------------- 61.3%

PANEL JUDGEMENT: Marginally Satisfactory (2)

For the third objective within Domain 1, students were required to interpret figurative language occurring within literary narrative passages and poems. As shown in Table 3.24, student performance exceeded the Panel's "desirable" standard for two items, fell between "acceptable" and "desirable" for one item, and below "acceptable" for three items. Not surprisingly, students appeared to find the interpretation of metaphors somewhat more difficult than that of similes. Items S18 and T37 are shown below:

S18 "His future, like a book
With half the pages still uncut."

These lines mean that...

%		
80	*A.	no one will ever know what his future might have held.
3	B.	her brother will be remembered through her book of poetry.
13	C.	her brother didn't realize that his life would end so early.
1	D.	there are many books her brother will never read.
2	E.	I don't know.

T37 Why does the author state that David is washed up on the side of the highway?

%		
24	*A.	because he arrived there by chance.
3	B.	because he is very clean.
11	C.	because he is lost.
55	D.	because he is unhappy.
2	E.	I don't know.
5	omitted	

[From "Somebody's Son"] "He sat, washed up on the side of the highway, a slim, sun-beaten driftwood of a youth."

Most students had little difficulty interpreting the simile given in item S18; most of those who selected an incorrect option chose C recognizing that the quotation dealt with an early death; only 4% of students chose B or D, apparently failing to recognize the quotation as a figure of speech. On the other hand, students found the metaphor presented with item T37 extremely difficult: only one student in four correctly associated "washed-up... driftwood" with a chance occurrence. More than one-half of the students associated the metaphor with the unhappiness which they perceived in the character. The metaphor occurs in the opening sentence of the passage; it appears that students based their responses to the item on their interpretation of the entire story rather than on an analysis of the relevant sentence.

Mean percent correct for the six items associated with figurative language was 61.8. The Panel judged this to be Satisfactory (3 on a 5-point scale) as it was virtually coincidental with the "acceptable" standard of 62%.

Table 3.24
Provincial Results for Grade 10: Objective 1.3, Interprets Figurative Language

Item Number	Description	Percent Correct
T25	personification (Foul Shot)	82
S18	simile - poem (This Was My Brother)	80
-----PANEL STANDARD	-------------DESIRABLE--------------------------------	76%
S37	simile - narrative (Saturday Climbing)	65
-----PANEL STANDARD	------------ACCEPTABLE-------------------------------	62%
R19	metaphor - poetry (Roller Coaster)	60
R40	simile - narrative (Saturday Climbing)	60
T37	metaphor - narrative (Somebody's Son)	24

Mean Performance------------------- 61.8%

PANEL JUDGEMENT: Satisfactory (3)

Six items assigned to Domain 1--three associated with context clues and three with multiple meanings--were administered to grade 12 students in the 1980 B.C. Reading Assessment. Comparative results are shown in Table 3.25. It is not possible to base conclusions about change in student performance on these data. First, the grade level tested is not constant; secondly, the number of items is relatively small; and finally, the extent of missing data varies markedly from 1980 to 1984. The survey instruments for grade 12 students in 1980 proved to be somewhat lengthy for the administration time allotted. Consequently, many students did not attempt several items. For each item, the p-values reported were thus based on the number of students who attempted the item, rather than on the number of students who wrote the survey (see Tuinman & Kendall, 1980, p. 55).

The 1984 grade 10 surveys were not subject to the same problem; thus, p-values reported here are based on all students who wrote the tests. Table 3.25 shows both "raw" percent correct--based on all students--and "adjusted" percent correct--based on only those students who offered a response--for the 1980 grade 12 population; entries for the 1984 grade 10 population are based on all students who wrote the tests.

It is not surprising to note that current grade 10 performance is somewhat lower than 1980 grade 12 performance. When Interpretation Panel ratings for the two objectives involved are compared, the rating for discriminating among multiple meanings is unchanged: both the 1980 grade 12 Panel and the 1984 grade 10 Panel rated student performance Marginally Satisfactory. On the other hand, the 1984 grade 10 Panel judged performance on items dealing with context clues to be Very Satisfactory; the 1980 grade 12 Panel assigned a rating of Satisfactory to the same objective.

Table 3.25
Grade 10: Domain 1, Understands Words and Expressions:
Comparison with 1980 Grade 12 Performance

Objective	Item		Grade 12 1980 adj-p	Grade 12 1980 raw-p	Grade 10 1984 raw-p
1.1	R04	scissile in context	57	57	50
	S03	rorquals in context	59	56	51
	T04	yamen in context	68	64	62
1.2	S01	application in context	75	74	68
	S02	provision in context	43	43	50
	T02	dissolution in context	66	58	51
		Mean	61.3	58.7	55.3

The grade 10 Interpretation Panel judged overall performance on the 21 Domain 1 items to be Satisfactory--the mid-point on a 5-point rating scale.

3.4.2 Literal Comprehension

At grade 10, Domains 2, 3 and 4 involved literal, inferential, and critical comprehension, respectively. Stimulus materials included: two literary narrative passages; three poems; four informative passages (science); and six personal essays. One of the narrative passages appeared on two forms of the achievement survey; each form contained five or six stimulus passages for comprehension. Two of these passages are reproduced here: "Wild Horses" by Paul St. Pierre, appears as Figure 3.5; an excerpt from The Snow Walker, by Farley Mowat, as Figure 3.6.

Domain 2, Literal Comprehension included 21 items--7 assigned to each of forms R, S, & T. The Advisory Committee assigned a lower priority to the assessment of literal comprehension, relative to the assessment of inferential and critical comprehension, noting that the instructional emphasis in secondary grades is on higher levels of comprehension. Not surprisingly, over half of the items in this domain were associated with informative content area materials where literal understanding is often most difficult.

WILD HORSES

The fickle eye of public interest has, in recent years, focused briefly on the Cariboo wild horses. Wild horses have attracted the attention of ranchers for generations, but the interest of the general public in such matters is always briefer -- although it may be, for a short time, far more intense.

The majority view of the ranchers seems clear. They want wild horses tamed, trapped and sold, or shot, according to merit. They say that they are runts which kidnap mares from domestic herds and take them away into the mountains. They say that wild horses breed down the domestic stock. They say that the life of a wild horse is nasty, brutish, and short -- and the shorter the better.

Those who love the wild horse bands say there is something splendid about anything wild and free. Should we wipe out the last of the wild horse bands, they say, we will regret it, even as we would regret the extinction of moose, deer, or any other wild creature.

Having had the good fortune to watch a wild band stampeding across a lonely mountain meadow with their broomtails streaming in the wind of their passage, I have been able to develop a sympathy for both points of view.

Wild horse herds develop during cycles of moderate weather. Those who are opposed to the protecting of wild horses say that it is an exercise in cruelty; that in the B.C. mountains all such bands face a cruelly slow death by starvation when one of our severe winters locks up their feed areas in the remote mountain valleys.

Over the years, the wild horse herds have been thinned by men as well as by winters. Some herds were driven into crudely-built corrals with long wings; once trapped there, animals of good conformation might have been chosen for domestication. Others were sold to be butchered for fox feed. In other circumstances, cowboys were sent out to shoot wild horses; bounties were sometimes paid.

As the fences advance and our wilderness shrinks, we may encounter a day when they will no longer exist. Whether this will be a better and kinder thing is still open to debate.

— Paul St. Pierre

Figure 3.5 Personal Essay Passage from Grade 10 Surveys

WINTER

Stories about the good old-fashioned winters when snow mounted to the eaves of houses and horse-hauled sleighs were galloped over drifts at tree-top level are not just old wives' tales. A hundred years ago such happenings were commonplace. However, during the past century our climate has experienced a warming trend, an upswing (from our point of view), in the erratic cyclic variations of the weather. It has probably been a short-term swing and the downswing may soon be upon us. And where will we be then, poor things, in our delicately structured artificial world? Will we still admire snow? More likely we will curse the very word.

-- Farley Mowat

Figure 3.6 Personal Essay Passage from Grade 10 Surveys

Provincial results for Domain 2 are shown in Table 3.26. While each item was assigned to one of three objectives--understands central ideas, recognizes relationships, or understands supporting information--the Interpretation Panel viewed items within this domain as a single set and established overall standards for "acceptable" and "desirable," levels of performance. As shown in Table 3.26, student performance fell between "acceptable" and "desirable" standards for over half the items in Domain 2. Performance exceeded the "desirable" standard for 2 items, and fell below "acceptable" for 7 items. Variations in item results do not appear to be attributable to differences among objectives. There was, however, some tendency for students to perform better on items associated with informative stimulus material than on those associated with personal essays: 3 of 5 items which less than 70% of students answered correctly are associated with personal essays, while 7 of the 8 items which more than 75% of students answered correctly were dependent on informative material. Students found one item, R36, extremely difficult:

R36 How did Barry think he could provide his daughter with a feeling of security?

%		
28	A.	by being a companion to her
11	B.	by providing her with everything she needed
47	*C.	by keeping life simple
4	D.	by opting out of society
4	E.	I don't know.
6	omitted	

The keyed response can be found in two contiguous sentences within the narrative stimulus passage:

> "He did his best to keep life simple and uncomplicated. It was, he thought, the way to provide security."

Why, then, did fewer than half of the students answer correctly? First, 10% of students either failed to respond or selected "I don't know." A further 15% chose options B or D, neither of which is supported by the passage. These students either did not read the passage--a relatively long excerpt which occurred at the end of the test--or completely failed to recognize the father's explicitly stated motivation. Most students who responded incorrectly, however, chose option A, apparently responding according to their overall perception of the relationship between the characters--who were "companions" in that they were mountain climbing together--rather than examining the text for relevant evidence. The time constraints of the testing situation may well have encouraged this type of error. However, while this item represents the most extreme example, it is not an isolated case. Analyses of incorrect responses to several items suggests that many students who fail to answer the literal comprehension items correctly are not necessarily unable to recognize or comprehend relevant sections of text; rather, they have failed to consult the text after a first reading, often maintaining--as in the item discussed above --a flawed perception of the material.

Table 3.26
Provincial Results for Grade 10: Domain 2,
Literal Comprehension

Item Number	Description	Percent Correct
S24	Central idea - science (Earthquakes)	93
T12	Cause - science (Hurricanes)	86
-----PANEL STANDARD	------------DESIRABLE-------------------------------	83%
R10	Cause - natural science (Coyotes)	82
R24	Similarity - natural science (Whiskers)	82
T15	Relationship - science (Hurricanes)	80
S23	Supporting information - science (Earthquakes)	78
S31	Central idea - personal essay (Animals Captive)	76
R20	Cause - natural science (Whiskers)	75
T33	Central idea - personal essay (Winter)	74
T40	Supporting information - narrative (Somebody's Son)	74
T7	Central idea - personal essay (Wild Horses)	73
R21	Comparison - natural science (Whiskers)	72
S10	Cause - personal essay (Orphan Colts)	71
T38	Cause - narrative (Somebody's Son)	71
-----PANEL STANDARD	------------ACCEPTABLE------------------------------	71%
T14	Comparison - science (Hurricanes)	70
S25	Supporting information - science (Earthquakes)	70
R35	Cause - personal essay (Species at Risk)	65
R30	Central idea - personal essay (Species at Risk)	65
S36	Relationship - personal essay (Snow People)	63
S27	Central idea - science (Earthquakes)	60
R36	Cause - narrative - (Saturday Climbing)	47

Mean Performance-------------------- 72.7%

PANEL JUDGEMENT: Very Satisfactory (4)

Overall, students displayed little difficulty with the items in Domain 2. The Interpretation Panel judged performance to be Very Satisfactory (4 on a 5-point scale), noting that the mean percent correct of 72.7 compared favourably with the "acceptable" standard of 71% and that percent correct fell below 70% for only 5 of the 21 items. They concluded that most grade 10 students are able to deal competently with explicit information.

3.4.3 Inferential Comprehension

Twenty-four items on the grade 10 achievement surveys were assigned to Domain 3, Inferential Comprehension, and related to inference and interpretation beyond the literal level. These items require processes such as synthesis, translation, and analysis: students must make generalizations or predictions, infer relationships, draw conclusions, and infer main ideas.

Table 3.27
Provincial Results for Grade 10: Domain 3,
Inferential Comprehension

Item Number	Description	Percent Correct
S17	Conclusion - poem (This Was My Brother)	87
T24	Central idea - poem (Foul Shot)	86
T16	Conclusion - science (Hurricanes)	82
T10	Generalization - personal essay (Wild Horses)	81
T26	Generalization - poem (Foul Shot)	79
R22	Relationship - natural science (Whiskers)	79
-----PANEL STANDARD	-------------DESIRABLE--------------------------------	79%
S15	Central idea - poem (This Was My Brother)	77
R18	Comparison - poem (Roller Coaster)	77
T36	Generalization - narrative (Somebody's Son)	76
S26	Central idea - science (Earthquakes)	74
T11	Central idea - personal essay (Wild Horses)	72
R23	Conclusion - natural science (Whiskers)	72
R38	Cause - narrative (Saturday Climbing) (S39)	72
S39	Cause - narrative (Saturday Climbing) (R38)	70
T34	Generalization - personal essay (Winter)	70
R7	Conclusion - science (Coyotes)	68
S29	Generalization - personal essay (Animals Captive)	67
R16	Conclusion - poem (Roller Coaster)	68
-----PANEL STANDARD	-------------ACCEPTABLE--------------------------------	66%
R37	Cause - narrative (Saturday Climbing) (R38)	61
T8	Cause - personal essay (Wild Horses)	60
S38	Cause - narrative (Saturday Climbing) (R37)	59
R39	Conclusion - narrative (Saturday Climbing) (S40)	51
S6	Central idea - personal essay (Orphan Colts)	47
S40	Generalization - narrative (Saturday Climbing)(R39)	45

Mean Performance------------------- 70.0%

PANEL JUDGEMENT: Very Satisfactory (4)

Table 3.27 presents provincial results for the items in this domain, along with the "acceptable" and "desirable" performance levels established by the Interpretation Panel. Twenty-one unique items were assigned to this domain at grade 12; three items--all associated with the narrative passage "Saturday Climbing"--were repeated on two different forms of the survey. Table 3.27 presents results for 24 items, although, in fact, items R38 and S39 are identical, as are items R37 and S38, and items R39 and R40. Students found two of these items relatively difficult; thus, while Table 3.27 shows 6 items below the "acceptable" standard, in fact, only 4 of these are unique. Student performance exceeded the "desirable" level on 6 items and fell between "acceptable" and "desirable" on 11 unique items, with S39 replicating R38.

Again, there appears to be no systematic variation in student performance on the objectives within this domain. There is, however, some tendency for students to perform better on items associated with the poems presented than with informative passages.

Student errors on items within this domain typically involved misinterpretation or incomplete interpretation of material presented, as shown in results for items S6, associated with the passage "Orphan Colts," and T8, based on "Wild Horses" (see Figure 3.5):

S6 According to the author, why are orphan colts "the greatest horses the Cariboo Country has ever produced"?

%		
14	A.	They usually grow up to be cayuses.
27	B.	They are usually of quarter-horse stock.
47	*C.	They provide hope.
6	D.	They can be sold to inexperienced ranchers.
5	E.	I don't know.

T8 Why do some people believe that it is cruel to allow wild horse bands to develop?

%		
20	A.	Wild horses breed down domestic stock.
9	B.	Wild horses are often hunted and shot.
7	C.	Wild horses may be trapped and butchered for fox feed.
60	*D.	Wild horses will eventually starve.
3	E.	I don't know.

To answer item S6 correctly, students must integrate the information contained in a short passage--particularly the closing paragraphs. The 27% of students who chose option B apparently failed to attempt this synthesis, attempting, rather, to locate an answer in the passage. They have, in fact, applied literal comprehension strategies to an item which requires an inference. The 20% who incorrectly chose A for item T8 appear to have made a similar error, in spite of the fact that the correct selection can be made on the basis of a single phrase, i.e. "cruelly slow death by starvation."

Overall, students did not appear to have difficulty making the inferences required by this domain. The Interpretation Panel judged performance to be Very Satisfactory. The overall mean percent correct of 70% compared favourably with the "acceptable" standard of 66%; if item duplications were eliminated, mean percent correct would increase slightly to 71.5%.

Where grade 10 students had difficulty with items in Domains 2 and 3, they typically failed to apply the appropriate strategy. As noted in the previous section, students who responded incorrectly to literal comprehension items frequently appeared to base their answers on an inappropriate inference; similarly, where they chose incorrect responses to inferential items, they most often selected options which consisted of words or phrases which were explicitly presented within the passage, but irrelevant or inappropriate in terms of the question.

3.4.4 Critical Comprehension

The 1984 Reading Assessment Advisory Committee assigned highest priority to the assessment of critical reading skills. The 30 items assigned to this domain relate to analytic and evaluative skills; they require students to recognize the author's purpose, to identify probable sources of material, to analyze the use of a technique, to evaluate statements on the basis of relevance and logic, to distinguish between fact and opinion, and to perceive the author's attitudes or biases. Most of the items are associated with stimulus materials drawn from personal essays, although poetry, narrative passages, and informative material are also represented.

Table 3.28 presents item-level results for this domain, along with Interpretation Panel standards and judgements. The Panel perceived this set of items as being relatively difficult; consequently, the "acceptable" standard of 64% is slightly lower than those associated with other domains. Performance on 4 items exceeded the "desirable" standard of 77%; 3 of these were associated with literary material. Results for 11 items fell between "acceptable" and "desirable;" for 15 of 30 items, student performance did not reach the "acceptable" level.

Students found two passages from The Snow Walker by Farley Mowat ("Winter" and "The Snow People") particularly difficult. Item S35 is the most extreme example; only one student in four chose the keyed response:

S35 What is the author's attitude toward development of our northern areas?

%		
42	A.	He doesn't show his opinion one way or the other.
15	B.	He is in favour of increased development.
25	*C.	He is NOT in favour of increased development.
6	D.	He thinks development of the north is impossible.
7	E.	I don't know.
5	omitted	

Student difficulty with this item was unanticipated; it was expected that most grade 10 students would recognize the phrase "...hasten the rape of the north..." as indicating negative affect. Such was not the case. Most students apparently concluded that because the author did not explicitly state an opinion, he didn't display an attitude.

Students also had difficulty with item T35 presented with the passage shown in Figure 3.6. Here, nearly one-quarter of the students selected C, a response which makes little sense either in the context of the passage or on the basis of prior knowledge. It appears that many students, unable to deal effectively with the question, chose this response either on the basis of its apparent sophistication, or because it repeated the words "erratic cycle" from the passage.

T35 Which of the following best states the author's belief about modern technology?

%		
42	*A.	He believes it has made us helpless.
14	B.	He believes it will enable us to predict and control climate.
23	C.	He believes it is entering an erratic cycle.
08	D.	He believes it is the only hope for survival.
10	E.	I don't know.

It seems probable that student difficulty with the passages by Farley Mowat is at least partially attributable to the sophistication of the language and the structures used; readability is high, relative to other passages used.

The passages were selected, in part, on the basis of their interest level for 14 and 15 year olds; consequently, many of the personal essays dealt with issues on which many students hold strong opinions. Most students were apparently able to view an author's arguments dispassionately and deal

Table 3.28
Provincial Results for Grade 10: Domain 4, Critical Comprehension

Item Number	Description	Percent Correct
T22	Analyzes technique - poem (Foul Shot)	89
T39	Recognizes attitude - narrative (Somebody's Son)	81
S9	Recognizes attitude - personal essay (Orphan Colts)	79
R17	Recognizes purpose - poem (Roller Coaster)	77
-----PANEL STANDARD	-------------DESIRABLE-------------------------------	77%
R9	Logical conclusion - natural science (Coyotes)	75
R11	Relevant/Irrelevant - natural science (Coyotes)	75
R33	Recognizes attitude - personal essay (Spec at Risk)	74
T6	Recognizes purpose - personal essay (Wild Horses)	70
T17	Recognizes purpose - science (Hurricanes)	70
R32	Recognizes purpose - personal essay (Spec at Risk)	69
R34	Analyzes technique - personal essay (Spec at Risk)	69
T13	Analyzes technique - science (Hurricanes)	69
T9	Analyzes technique - personal essay (Wild Horses)	68
S30	Recognizes attitude - personal essay (Animals Capt)	68
T23	Analyzes technique - poem (Foul Shot)	64
-----PANEL STANDARD	-------------ACCEPTABLE-------------------------------	64%
S16	Analyzes technique - poem (This Was My Brother)	63
R25	Recognizes purpose - natural science (Whiskers)	62
S32	Recognizes bias - personal essay (Snow People)	62
T32	Analyzes technique - personal essay (Winter)	61
S8	Recognizes attitude - personal essay (Orphan Colts)	60
S34	Recognizes bias - personal essay (Snow People)	58
S28	Recognizes purpose - personal essay (Animals Capt)	58
R31	Recognizes attitide - personal essay (Spec at Risk)	57
S33	Analyzes technique - personal essay (Animals Capt)	53
R6	Identifies source - natural science (Coyotes)	51
S7	Identifies source - personal essay (Orphan Colts)	51
T31	Analyzes technique - personal essay (Winter)	50
R8	Recognizes purpose - natural science (Coyotes)	46
T35	Recognizes attitude - personal essay (Winter)	42
S35	Recognizes attitude - personal essay (Snow People)	25

Mean Performance-------------------- 63.2%

PANEL JUDGEMENT: Satisfactory (3)

effectively with questions about the author's purpose or bias. Many students, however, appear predisposed to recognizing their own biases--or those which they find acceptable--whether or not these are evident in the text. For example, in item S30 below, many students were apparently able to ignore the balanced presentation made by the author of a passage about animals in captivity:

S30 Which statement best describes the author's view on keeping animals captive?

%		
05	A.	He thinks it is moral.
68	*B.	He has mixed feelings about the issue.
16	C.	He thinks it is immoral.
06	D.	He thinks there should be more research.
02	E.	I don't know.

The Interpretation Panel judged overall performance on this domain to be Satisfactory, noting that mean performance of 63.2% correct was virtually coincidental with the "acceptable" standard established as 64%. However, in view of the contention of the Advisory Committee that a literate, educated population must be able to evaluate both the message and the form of written materials, the results presented in this section offer some cause for concern. Many students are apparently unable to examine print material critically.

3.4.5 Locates and Uses Information

Domain 5, Locates and Uses Information, was represented by 24 items assigned to two objectives at grade 10. The 12 items associated with Objective 5.1 required students to interpret information provided in standard formats--a table of contents and a set of encyclopaedia guide words. Objective 5.2, also represented by 12 items, required students to derive information from graphic and tabular formats.

Table 3.29 presents provincial results for Objective 5.1. The Interpretation Panel set relatively high standards--72% for "acceptable" and 84% for "desirable"--for this objective, contending that a high level of competence on the associated items is required for success in secondary school, particularly in content area subjects.

Student performance exceeded the "desirable" standard for 2 items, fell between "acceptable" and "desirable" for 5 items. Students had most difficulty with 3 items associated with a table of contents from a geology text. The stimulus material was adapted from galley proofs of the text authorized for General Science 10. Item T37 asked what kind of textbook the table of contents was taken from; 29% incorrectly selected "social studies." Item T30 asked students to indicate the section which would be most useful as an overview; 23% chose a section entitled "Why Do Earthquakes Occur?" rather than the keyed response, "Summary and Review." These students appear to have no systematic

Table 3.29
Provincial Results for Grade 10: Objective 5.1,
Locates Information Using Standard Formats

Item Number	Description	Percent Correct
S19	Table of contents	87
T29	Table of contents	84
-----PANEL STANDARD	-------------DESIRABLE----------------------------------	84%
R29	Encyclopaedia guide words	81
R27	Encyclopaedia guide words	80
S20	Table of contents	79
R26	Encyclopaedia guide words	76
S22	Table of contents	72
-----PANEL STANDARD	-------------ACCEPTABLE--------------------------------	72%
T28	Table of contents	68
R28	Encyclopaedia guide words	65
T27	Table of contents	61
T30	Table of contents	57
S21	Table of contents	53

Mean Performance--------------------- 71.9%

PANEL JUDGEMENT: Satisfactory (3)

strategy for effective use of a table of contents. Student performance was weakest on an item which required that students recognize a third-level heading; 44% incorrectly chose the relevant second-level heading, although the third specifically addressed the question. Students had less difficulty in differentiating among chapter and major section headings.

The Interpretation Panel judged student performance to be Satisfactory with mean percent correct of 71.9 coincidental with the acceptable standard of 72.

Results for Objective 5.2, Interprets Graphs and Tables, are shown in Table 3.30. Stimulus material for this objective included a bar graph showing softwood and hardwood reserves by province, and a chart outlining salient characteristics of various biomes. Students found these items relatively easy; performance exceeded the "desirable" standard of 84% on 7 items, fell between "acceptable" (73%) and "desirable" on 3 items, and below "acceptable" on only 2 items. Performance fell below 70% on only one item, T18:

T18 Which one of the following statements describes the temperate forest biome?

%		
48	*A.	It can get extremely hot.
8	B.	It can be extremely dry.
17	C.	Temperature stays constant.
16	D.	Rainfall stays constant.
11	E.	I don't know.

The chart provided indicated that precipitation for temperate forests ranged from 65 to 150 cm; temperature, from -24 C to 38 C. Students who chose options C or D above may well have been answering on the basis of their understanding of "temperate," rather than using information in the chart.

Table 3.30
Provincial Results for Grade 10: Objective 5.2,
Interprets Graphs and Tables

Item Number	Description	Percent Correct
R14	bar graph (Provincial Wood Reserves)	92
R12	bar graph (Provincial Wood Reserves)	91
T20	chart (Biomes)	90
S11	chart (Biomes)	89
T21	chart (Biomes)	88
T12	chart (Biomes)	85
R15	bar graph (Provincial Wood Reserves)	84
-----PANEL STANDARD	-------------DESIRABLE--------------------------------	84%
T19	chart (Biomes)	76
S14	chart (Biomes)	75
S13	chart (Biomes)	74
-----PANEL STANDARD	-------------ACCEPTABLE------------------------------	73%
R13	bar graph (Provincial Wood Reserves)	71
T18	chart (Biomes)	48

Mean Performance-------------------- 80.3%

PANEL JUDGEMENT: Very Satisfactory (4)

The Interpretation Panel judged performance on this objective to be Very Satisfactory with mean percent correct of 80.3 comparing favourably with the "acceptable" standard of 73%.

Panelists judged overall performance on the 24 Domain 5 items to be Very Satisfactory. Most students, they concluded, are able to deal with standard locational and graphic formats.

3.4.6 Summary: Grade 10 Achievement Survey

The Interpretation Panel rated performance on three of five domains as Very Satisfactory. Typically, students had little difficulty with items which dealt with literal or inferential comprehension, or with standard location formats or simple graphs or charts. Performance on Domain 1, Understands Words and Expressions, was judged to be Satisfactory, with some concern expressed for student ability to deal with multiple meaning words. The Advisory Committee considered Domain 4, Critical Comprehension, to be the most important domain for assessment at grade 10. Although the Interpretation Panel judged results for this domain to be Satisfactory, there is some cause for concern. While most students dealt effectively with critical comprehension tasks, many grade 10 students apparently lack the skills and strategies required to evaluate written materials.

3.5 Comparative Analyses of Student Achievement Levels

The 1984 assessment surveys and analyses were designed permitted four categories of comparisons:

1. comparisons of performance levels across grades;
2. comparisons of B.C. and U.S. student performance levels;
3. comparisons of Interpretation Panel judgements across grades;
4. comparisons of Interpretation Panel judgements across the 1976/77, 1980 and 1984 B.C. Reading Assessments.

A fifth set of comparisons--B.C. student performance levels across B.C. assessments--have been described in earlier sections of this Chapter; they are summarized briefly here.

3.5.1 Cross-grade Item Results

Tables 3.31 and 3.32 present results for items used at more than one grade level. For the 10 common items at grades 4 and 7, the mean difference shown in Tables 3.31 is approximately 17%. Not surprisingly, the differences were most apparent for items where the grade 4 p-values were relatively low, and least apparent where a high percentage of grade 4 students selected the correct answer. A ceiling effect is apparent, for example, on items associated with the poem, "The Mouse."

Table 3.31
Comparison of Item-level Results: Grades 4 and 7

Description	Percent Correct	
	Grade 4	Grade 7
fortuitous in context	32	78
livery in context	51	77
literal: relationship (Arctic Foxes)	72	89
literal: central idea (The Mouse)	84	94
inferential: central idea (The Mouse)	85	91
inferential: relationship (The Mouse)	86	90
inferential: prediction (Arctic Foxes)	41	48
critical: relevance (Arctic Foxes)	50	72
critical: purpose (Arctic Foxes)	82	92
locate information (Table of Contents)	73	90
locate information (Table of Contents)	64	82
Mean for comparison items	65.5	82.1

Table 3.32
Comparison of Item-level Results: Grades 7 and 10

Description	Percent Correct	
	Grade 7	Grade 10
fortuitous in context	78	92
livery in context	77	83
sanguine in context	53	72
rejoinder in context	78	82
averred in context	70	84
primed in context	78	89
count in context	55	64
literal relationship (Somebody's Son)	72	71
inferential: generalization (Somebody's Son)	62	75
critical (Somebody's Son)	68	81
Mean for comparison items	69.1	79.3

Table 3.32 presents comparative data for 11 items used at both grade 7 and 10. On average, items were answered correctly by 10% more students at grades 10 than at grade 7. The difference in performance is relatively stable across items except for one item based on the literary narrative "Somebody's Son," where a number of grade 10 students ignored explicit information in the text and selected an unsupported inference.

Two items were used at all three grade levels; response distributions by grade are given below:

We were surprised to see them. We did not know they were in France; our meeting was fortuitous.
The word fortuitous most likely means...

	Percent of Students		
	Grade 4	Grade 7	Grade 10
A. well-planned.	19	8	3
B. in far places.	14	5	1
C. in a group of four.	7	2	1
*D. accidental.	32	78	92
E. I don't know.	27	6	2

A shout went up from the crowd as they saw the bright green and yellow livery of the palace guard.
The word livery most likely means...

	Grade 4	Grade 7	Grade 10
*A. special uniform.	51	77	83
B. cannons.	5	4	3
C. horses.	3	3	4
D. royal family.	14	6	2
E. I don't know.	26	10	7

As noted earlier grade 4 students were more likely to select "I don't know" than their older counterparts. In this case, it is somewhat discouraging to find more than 25% choosing not to attempt items with the cue words most likely in the stem. Younger students who selected incorrect responses were most likely to base their choice on association; thus, the associative response "royal family" was the most frequent incorrect choice at grade 4, but the least frequent at grade 10.

Previous assessments have also examined cross-grade differences involving grades 4, 8, and 12. In the 1976/77 Assessments, on average, 8% more of grade 8 than grade 4 students answered the common items correctly. In 1980, the mean difference--based on only 4 items--was 28%. The mean difference of 17% reported here for grades 4 and 7 is consistent with the 1980 result.

In 1977, a mean difference of 16% was reported for grades 8 and 12; in 1980, the mean difference was 19%. The results reported here show a difference of 10% between grades 7 and 10--slightly lower than might have been expected in the light of previous data. It should be kept in mind, however, that no valid conclusions can be drawn on the basis of comparisons between grades 7 and 10 differences on one hand, and grades 8 and 12 on the other. As well, the degree of difference is affected by a number of factors such as domain, item difficulty, and stimulus material. Since different sets of cross-grade items were used in each of the three assessments, the data presented here represent a very limited indication of the effects of schooling.

3.5.2 Comparisons with the National Assessment of Educational Progress

Eleven items on the grade 4 achievement survey, and 3 items on each of the grades 7 and 10 surveys replicated items used by NAEP in the American 1980 assessment of reading. Comparative results are shown in Table 3.33. NAEP samples by age, rather than grade; thus, comparisons are equivocable. Further, the small number of comparison items for grades 7 and 10 does not provide the basis for any firm conclusions.

Given these limitations, it seems apparent that B.C. grade 4 students enjoy a decided advantage over their American counterparts, with the difference most apparent on items associated with comprehension skills, and less decisive for items associated with locating and using information in standard formats. For the 5 comprehension items, the B.C. mean of 73% correct exceeds the NAEP mean by 14%; for the remaining 6 items, the B.C. mean of 70% is only 4% above the NAEP mean.

B.C. grade 7 students performed slightly better than American 13-year-olds on the few comparison items used, and American 17-year-olds performed slightly better than B.C. grade 10 students.

Overall, B.C. students' reading skills compare favourably with those of the NAEP sample. It should be kept in mind, however, that while the items were held constant, administrative conditions were not. Further, the NAEP data are valid only for the population sampled--American students who were 9, 13, or 17 years old in 1980.

3.5.3 Interpretation Panel Judgements Across Grade Levels and Time

Table 3.34 shows the Interpretation Panel ratings of student performance by objective, domain, and grade. Interpretation Panels at all grades rated student performance on items associated with literal understanding and with locating and using information as 4 on a 5-point scale (Very Satisfactory). At grade 4, panelists assigned the same rating--4 on a 5-point scale--to all domains. At both grades 7 and 10, performance on items requiring critical comprehension was rated 3 on a 5-point scale or Satisfactory. At grade 7, panelists rated inferential comprehension Satisfactory, and understanding words and expressions Very Satisfactory; the reverse was true at grade 10. Overall, then, the Interpretation Panels found student performance encouraging.

Table 3.33
Comparison of Item-level Results: NAEP, 1980 with B.C., 1984

Description		Average Age		Percent Correct	
		NAEP	B.C.	NAEP	B.C.
R11	Explicit relationship	9.5y	10.0y	59	81
R14	Explicit detail			67	60
R15	Generalization			59	75
R23	Infer central idea			63	73
T25	Infer central idea			46	70
S36	Infer cause			58	71
T34	Table of contents			83	82
T35	Table of contents			75	72
T36	Table of contents			84	87
T22	Interpret menu			70	76
T23	Interpret menu			82	87
	Mean			67.8	75.8
S33	Infer cause	13.5y	13.0y	80	83
S37	Generalization			62	62
T32	Recognize purpose			74	80
	Mean			72.0	75.0
T36	Generalization	17.5y	15.0y	79	76
R28	Encyclopaedia			76	65
R29	Encyclopaedia			79	81
	Mean			78.0	74.0

Table 3.34
Interpretation Panel Ratings of Student Performance by Grade

Domain	Rating[a]		
	Grade 4	Grade 7	Grade 10
Words and expressions	4	4	3
Literal comprehension	4	4	4
Inferential comprehension	4	3	4
Critical comprehension	–	3	3
Locates and Uses Information	4	4	4

[a] On a 5-point scale, where 5 = Strong; 4 = Very Satisfactory; 3 = Satisfactory; 2 = Marginally Satisfactory; and 1 = Weak.

Tables 3.35 and 3.36 compare Interpretation Panel ratings for 1976/77, 1980, and 1984, indicating the relative degree to which students met Panel expectations.

It is important to keep in mind that domain definitions, while similar, are not congruent across assessments. Further, neither items nor grade levels were held constant across the three assessments. Finally, the 1976 Panel used a 3-point rating scale, represented here as 1 = weak, 3 = Satisfactory, and 5 = Strong--in fact, all domains discussed here were rated Satisfactory.

Grade 4 student performance on Domain 1 items was more favourably received in 1984 than was the case in 1976 and 1980. The 1984 Panel judged performance on items related to high frequency words and multiple meanings to be Strong. The 1980 Panel rated performance on high frequency words Very Satisfactory; understanding of multiple meanings was not tested. In both 1980 and 1984, use of context clues was judged Satisfactory, and use of structural analysis, Marginally Satisfactory. Both student performance and Panel perceptions of results were extremely stable across the two assessments.

The 1984 overall Domain 1 rating for grade 7 is comparable to earlier domain ratings for grade 8, although there are clear differences for specific objectives. As described earlier, in section 3.3.1, the most interesting comparison involves performance on the set of items associated with multiple meanings. All of these items appeared on both the 1984 grade 7 and the 1980 grade 8 achievement surveys. In spite of the fact that between 1 and 5% more of 1984 grade 7 students answered these items correctly compared to 1980 grade 8 students, the 1984 Interpretation Panel rated performance Satisfactory, while the 1980 rating was Very Satisfactory.

Table 3.35
Domain 1, Words and Expressions: Interpretation Panel Ratings for 1976/77, 1980, and 1984

Grade/Objective	Rating 1976/77	1980	1984
Grade 4			
High frequency words	5	4	5
Context clues	4	3	3
Multiple meanings	-	-	5
Structural analysis	3	2	2
Overall domain rating	3	3	4
Grade 7/8			
High frequency words	2	3	4
Context clues	3	3	5
Multiple meanings	-	4	3
Overall domain rating	3	3+	4
Grade 10/12			
Context clues	3	3	4
Multiple meanings	-	2	2
Figurative language	-	-	3
Overall domain rating	3	2	3

Note. 1977 and 1980 ratings were based on grades 8 and 12 performance; 1984 ratings on grades 7 and 10.

The basis for examining comparative ratings is weakest for grade 10 students, since previous reading assessments involved grade 12 students. Overall, the 1984 grade 10 Panel was more satisfied than the 1980 grade 12 Panel with Domain 1 results.

Table 3.36 shows comparative 1976/77, 1980, and 1984 ratings for performance on comprehension items. The basis for comparison here is extremely weak due to variations in definiton, stimulus material, item difficulty, and grade level. It is interesting to note that the grade 7 and 8 ratings are extremely stable over time; in fact, there is no variation between 1980 and 1984. Ratings at other grade levels are also relatively stable, although there is a slight increase at grade 4, and somewhat greater satisfaction with current grade 10 performance as compared to previous grade 12 performance.

Table 3.36
Comprehension Skills: Interpretation Panel Ratings for 1976/77, 1980, and 1984

Grade/Domain	Rating 1976/77	1980	1984
Grade 4			
Literal comprehension	3	4	4
Inferential/critical comprehension	3	3	4
Grade 7/8			
Literal comprehension	3	4	4
Inferential comprehension	3	3	3
Critical comprehension	3	3	3
Grade 10/12			
Literal comprehension	3	3	4
Inferential comprehension	3	3	4
Critical comprehension	3	3+	3

Note. 1977 and 1980 ratings were based on grades 8 and 12 student performance; 1984 ratings on grades 7 and 10.

Overall, then, the comparative data indicate that:

- Consistent, substantial gains in performance are associated with higher grade levels;
- B.C. student performance compares favourably with that of their American counterparts, particularly for younger students and for items asociated with passage comprehension;

- The grade 4 Panel perceived student performance most favourably, assigning Very Satisfactory ratings to all domains. At both grades 7 and 10, 3 domains were rated Very Satisfactory, while 2 were judged Satisfactory. At all grade levels, Panelists rated performance on literal comprehension items and on those associated with locating and using information as Very Satisfactory; and

- At grade 4, where a clear basis for comparison exists, comparative data indicated stability in both student performance and Panel expectations from 1980 to 1984. There is some indication that the 1984 Panel espoused higher performance standards than had their counterparts at grade 8 in 1980. Where common items were used, 1984 grade 7 performance levels were similar to 1980 grade 8 levels. At grade 10, comparisons with previous assessments are generally not informative. It can only be said that 1984 Panelists perceived grade 10 performance levels more favourably than previous Panels had viewed grade 12 performance.

CHAPTER 4

STUDENT BACKGROUND CHARACTERISTICS AND AFFECTIVE RESPONSES

4.1 Overview

This chapter describes the student population at each grade level in terms of background characteristics and affective responses. First, results of the background questionnaire are presented by grade; then, associations among background variables are described. Finally, responses to the Estes Reading Attitude Scale, to items focusing on perceived value of reading and preferred reading materials, and to open-ended affective questions are presented. Results are based on responses from 33 258 grade 4 students, 35 616 grade 7 students, and 29 385 grade 10 students.

4.2 Student Background Characteristics

The 1984 Reading Assessment surveys focused considerable attention on student background characteristics. Bryant and his colleagues (1974) have noted that unless the measurement of educational outcomes is accompanied by systematic collection of student background variables, data are of limited use for analytic purposes:

> For interpretation one also wants to know how effective the total educational process has been, both nationally and for specified subgroups, after allowance for differences that tend to handicap or give advantage to specified subgroups of interest. This analytical requirement provides an important motivation for collecting background variables. (p. 4)

In this assessment, students at each grade level responded to a series of questions which elicited information about biodemographic and sociocultural characteristics, school and classroom features, instructional status, reading and leisure activities, and--in the case of grade 10 students--future plans. At each grade level, all students responded to the same series of questions; as well, most questions and response options were held constant across grades. (See Appendix C for detailed item-level response distributions.)

4.2.1 Biodemographic and Sociocultural Characteristics

Table 4.1 shows within-grade distributions of students by gender, by first language, by language currently spoken at home, and by reported number of books in the home. Results of questions about parental education are also given for grade 10.

These data indicate a relatively stable student population. Males and females are equally represented at all grades. The percent of students who speak English as a second language ranges from 13.4 to 15.5; the percent of those who most often speak a language other than English at home, from 6.9 to

8.5. In 1982, during the B.C. Science Assessment, 12 to 15 percent of students reported that English was their second language, and 5 to 7 percent indicated that they most often spoke a language other than English at home (Taylor, 1982). Over the last two years the proportion of B.C. students who speak English as a second language appears to be unchanged; however, there is a slight increase in the proportion of students who are not regularly using English in their homes. These data suggest that the need for ESL programs and for appropriate resources and support materials within the regular Language Arts program has not declined.

Table 4.1
Summary: Student Biodemographic and Sociocultural Characteristics by Grade

Variable/value		Percent of Students[a]		
		Grade 4	Grade 7	Grade 10
Gender:	Male	50.4	50.9	49.6
	Female	49.6	49.1	50.4
First language:				
	English	85.5	86.5	84.4
	Other	14.4	13.4	15.5
Home language:				
	English	91.1	92.7	92.6
	Other	8.5	6.9	7.0
N. of books in home				
	0-9	2.2	1.3	1.4
	10-24	6.7	4.5	3.9
	25-99	20.0	19.0	19.0
	100-249	25.5	29.4	29.4
	250-499	19.8	24.0	23.7
	500+	25.4	21.7	22.5
Education:	mother			
	<high school			27.4
	high school graduate			35.0
	vocational or technical school			15.6
	some university			9.3
	university graduate			12.5
Education:	father			
	<high school			31.4
	high school graduate			23.8
	vocational or technical school			19.7
	some university			7.7
	university graduate			17.3

[a] Percentages are based on the number of students who provided a response.

Students' estimates of the number of books in their homes have been shown to be effective predictors of student achievement (Armor, 1972; Bachman, 1970; Flanagan & Cooley, 1966; Mayeske, Okada, Cohen, Beaton & Wisler, 1973; Smith, 1972). As shown in Table 4.1, B.C. students' estimates are relatively stable across the three grade levels surveyed, although grade 4 students were slightly more likely to report very high or very low numbers. At each grade, over 45% of students report more than 250 books in their homes, while between 5 and 9% report fewer than 25. On this variable, considered a surrogate for sociocultural status, the B.C. student population scores high in both relative--compared, for example, to the American data reported by Coleman and his colleagues (1966)--and absolute terms.

Information about parental education was solicited from only grade 10 students. Parental education is widely used as a surrogate for socioeconomic status (see, for example, Hilton, Rhett, Broudy, Bower, Carter, Creech & Echtenacht, 1972) and typically explains between 8 and 10 percent of the variance in student achievement scores (Bryant, Glaser, Hansen & Kirsch, 1974, p. 57).

As shown in Table 4.1, B.C. students reported slightly higher levels of postsecondary education for male compared to female parents or guardians, along with a slightly lower high school completion rate. Associations between biodemographic and sociocultural variables, and student outcomes are described in Chapter 6.

4.2.2 School and Classroom Characteristics

Educators and members of the public maintain a strong interest--and hold strong opinions--about the effects of such organizational features as school size, split-grade classrooms, and language of instruction. Table 4.2 shows the distribution of these variables for each grade. At grades 4 and 7, nearly 90% of B.C. students attend schools of 150 to 599 students; 82% of grade 4 students and 76% of grade 7 students are in classrooms of between 21 and 30 students. At grade 10, more than 60% attend schools of more than 600; nearly 70% of these attend English classes of 21 to 30 students. Grade 7 students are more likely to be assigned to larger classes--nearly 18% attend classes of 31 or more, compared to 13% at grade 10, and 10% at grade 4. Although the proportion of students who report 36 or more students in their classrooms is small, it represents a considerable number of students: 215 at grade 4, 299 at grade 7, and 145 at grade 10.

The proportion of students attending French Immersion classes is largest at grade 4, and shows a consistent decline through the higher grades.

Data presented in Table 4.2 indicate that most B.C. grades 4 and 7 students are in single grade classrooms: 67% at grade 4, and nearly 85% at grade 7. Grade 4 students are slightly more likely to be in a grade 4/5 classroom than a grade 3/4 classroom--17% versus 14%. Virtually all grade 7 students in multigrade classrooms are in grades 6/7 classes.

Table 4.2
Summary: School and Classroom Characteristics by Grade

Variable/Value		Percent of Students Grade 4	 Grade 7	 Grade 10
School size[a]:	<150	9.5	6.9	1.2
	150-599	88.4	89.6	34.9
	600+	2.2	3.6	63.9
Class size:	0-15	1.1	0.9	5.6
	16-20	6.1	5.0	12.2
	21-25	36.1	25.2	26.7
	26-30	46.5	51.3	42.9
	31-35	9.6	16.8	12.1
	36+	0.7	0.8	0.5
Program:	Regular	96.7	97.9	98.1
	Cadre	0.4	0.2	0.8
	French Immersion	2.6	1.6	1.0
N. of grades in classroom:	1	67.4	84.9	n/a
	2	31.4	14.4	n/a
	3	1.0	0.6	n/a
	4+	0.2	0.1	n/a

[a] Elementary and secondary students received different response options: these are collapsed here for ease of comparison. At grades 4 and 7, the largest group of students (approximately 40%) report attending schools of 250 to 399 students; at grade 10, 41% attend schools of 600 to 999, and 22.9% attend schools of 1000 or more students (See Appendix C).

4.2.3 Instructional Features

Table 4.3 summarizes the results of questions related to instruction. At grade 4, more than 18% of students report receiving special learning assistance, while this figure drops to 11% at grade 7 and less than 9% at grade 10. The proportion of students who report ever having attended ESL classes is stable across the grades at 6 to 7%; between 2 and 3% report currently attending such classes.

Grade 4 and 7 students were provided with a list of the most commonly assigned readers at each grade level and asked to indicate all those they were currently using. As shown in Table 4.3, titles from the Ginn 720 series were most often selected. At grade 4, 56% of students reported using A Lizard to Start With (Level 10); 9.5%, Inside, Out (Level 9); and 8.5%, Tell Me How the

Sun Rose (Level 11). It is likely that some of the students who selected "Other" have been assigned an out-of-level Ginn reader. At grade 4, 11% reported using Holt Rinehart and Winston's Ready or Not. Less than 6% indicated that they were not using a reader.

As expected, there was more diversity in assigned readers at grade 7. The Ginn series, however, retained its overwhelming popularity, with 39% of students using Mountains are for Climbing (Level 13) and nearly 20%, To Make a Difference (Level 14). A further 5% reported using Measure Me Sky (Level 12).

Table 4.3
Summary: Instructional Characteristics by Grade

Variable/value	Percent of Students		
	Grade 4	Grade 7	Grade 10
Attends learning assistance:			
YES	18.2	10.8	8.5
NO	81.7	89.0	91.1
Attended ESL ever:			
YES	6.8	6.2	6.9
NO	93.1	93.7	92.6
Attends ESL now:			
YES	3.1	2.4	2.9
NO	96.8	97.5	96.8
Current reader[a]:			
Ginn	72.9	61.5	n/a
Holt, Rinehart & Winston	11.3	14.2	n/a
Copp Clark	n/a	27.0	n/a
Nelson	3.3	1.1	n/a
Gage	0.8	1.5	n/a
Other	10.7	13.5	n/a
None	5.6	7.0	n/a
Reading instruction in English class:			
YES	n/a	n/a	43.1
NO	n/a	n/a	56.3
Days absent since Christmas:			
0	21.8	20.2	15.4
1- 2	31.1	30.8	28.8
3- 5	24.1	26.7	28.2
6-10	13.1	13.7	15.6
10+	9.7	8.5	12.0

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[a] Students were permitted more than one response; thus, the column does not sum to 100. At each grade, relevant specific titles were listed. These are discussed in the accompanying text; frequencies are shown in Appendix C.

The second most popular individual title was Copp Clark's Sense and Feeling, reported by 27%, followed by Holt, Rinehart and Winston's Inside, Outside, reported by 14%. A further 14% reported using a reader other than those listed, and 7% reported not using a reader at all. This proportion seems relatively small for grade 7 students in May; it had been expected that at this point many students would be using supplementary materials and prescribed/authorized novels rather than reading series. Most grade 4 students reported using only one reader. At grade 7, however, many students are apparently using two of the Ginn titles concurrently (1.4%) or one of the Ginn titles, along with Copp Clarke's Sense and Feeling (10.1%).

Forty-three percent of grade 10 students reported that they receive reading instruction in their English classes; 56% said they did not. This result is disconcerting; however, it is important to keep in mind that it is based on students' perceptions of their instruction, rather than on systematic monitoring of classroom practice.

Finally, students at each grade level were asked to indicate the number of days they had been absent from school in the preceding four months. Results were comparable for grade 4 and 7 students: over 20% had not been absent at all; 30% had missed only 1 or 2 days; and between 9 and 10% had missed more than 10 days, or 2 weeks of school. As anticipated, grade 10 students reported slightly more absences: 15% had missed no school; 29% only 1 or 2 days; and 12% had missed more than 10 days or 2 full weeks of instruction--an average of more than 1 day in 10.

4.2.4 Reading and Other Leisure Activities

Results of questions which dealt with recreational reading and other leisure activities are displayed in Tables 4.4 and 4.5. Students were asked to report on the previous day's reading and television watching. As shown in Table 4.4, nearly twice as many students reported watching television as reported leisure reading. Further, while between 5 and 7% spent more than 2 hours reading, between 33 and 40% watched more than 2 hours of television. Grade 4 students, overall, reported the least reading; they were also more likely to report both very small and very large amounts of television watching--over 32% watched none or less than an hour, while nearly 23% watched 4 hours or more.

Overall, the television watching rates are somewhat smaller than those reported in previous B.C. reading assessments. It should be noted, however, that previous assessment surveys asked students to estimate typical or average amounts watched, rather than the amount watched on the previous day.

Nearly 50% of grade 4 students reported reading a storybook in their spare time during the previous day; more than 25% had read a comic book. At grade 7, over 40% had read a novel, and more than 20% a magazine. Newspapers and comic books were each selected by approximately 17% of grade 7 students, while 14% reported reading non-fiction. Grade 10 students were less likely to have read a novel (37%) or comic book (6%) but more likely to have read a magazine (31%) or newspaper (26%). It is important to note that this survey was completed while the two B.C. newspapers with largest circulations, The Province and The Sun, were not publishing due to a labour dispute. Consequently, the percent of students who reported reading a newspaper is likely to be biased.

Students were also asked how many school and public library books they had borrowed in the previous month. As shown in Table 4.4, reported library use varies dramatically by grade. Over 90% of grades 4 and 7 students borrowed at least one library book in the previous month, compared to 70% of grade 10 students. Further, nearly 60% of grade 4 students borrowed six or more books, compared with 42% of grade 7 students, and 17% of grade 10 students. Clearly, libraries represent a much more important source of reading materials to younger children.

Table 4.4
Summary: Reported Reading/Leisure Activities by Grade

Variable/value	Percent of Students		
	Grade 4	Grade 7	Grade 10
Time reading yesterday:			
None	32.8	23.8	26.1
<1/2 hour	26.3	26.3	28.0
1/2-1 hour	23.8	29.1	27.1
1-2 hours	10.1	14.0	13.1
2+ hours	7.0	6.6	5.6
TV time yesterday:			
None	16.3	11.8	14.8
<1 hour	16.1	12.8	14.2
1 hour	15.7	14.8	14.8
2 hours	17.1	21.4	23.3
3 hours	12.0	17.1	17.0
4 hours	7.4	9.1	8.1
4+ hours	15.2	13.0	7.8
Material read yesterday[a]:			
Storybook/Novel	47.8	43.8	36.7
Newspaper	10.9	17.8	26.3
Magazine	12.2	22.6	31.4
Comic book	26.4	17.3	6.4
Non-fiction	-	14.3	11.2
Nothing	31.1	21.9	24.8
Library books last month:			
0	5.7	9.1	30.1
1 or 2	14.8	18.6	29.0
3-5	20.5	29.6	23.8
6-10	24.0	22.1	10.3
10+	34.4	20.2	6.5

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[a] More than one response permitted; column exceeds 100%.

Table 4.5 presents response distributions for two questions dealing with most and least favoured leisure activities. At all grades, the highest percentage of students selected Play a game or sport as their most likely leisure activity; less than 10% at each grade selected this as their least likely activity. Television ranked second as a favoured activity at all grades followed by reading a book at grade 7 and 10, and watching a movie at grade 4. While an equal percentage of students at each grade selected reading a book as their most likely activity, grade 7 and 10 students were much more likely to report reading a book as their least likely activity. At grade 4, 17% of students said they would be least likely to read a book; by grade 10, that figure doubles. At the same time, grade 10 students are much less averse to magazine reading than their younger counterparts.

Table 4.5
Summary: Preferred Leisure Activities by Grade

	Percent of Students		
Question/response	Grade 4	Grade 7	Grade 10
Suppose you had several hours of free time. Which one of the following would you most likely do?			
Play a game or sport	42.8	48.6	46.9
Watch TV	21.5	23.2	23.1
Read a book or story	15.5	15.7	15.6
Go to a movie	18.7	10.1	10.4
Read a magazine	1.4	2.2	3.9
Which one of the following would you least likely do?			
Read a magazine	35.5	25.4	15.9
Go to a movie	23.0	30.8	28.4
Read a book or story	16.8	27.1	34.8
Watch TV	15.9	10.3	10.9
Play a game or sport	8.6	6.4	9.9

4.2.5 Future Plans

Grade 10 students were asked about their postsecondary plans. The largest group of students, over 36%, indicated plans to attend university. A further 15% selected community college; 13%, technical or business school. Nine percent plan to enter the work force; nearly 18% were undecided. The percent of students planning to attend university may be unrealistically high, given current admission requirements and enrollment restrictions, and is nearly double the percent of grade 12 students who indicated similar plans in the 1982 Science Assessment survey. It is likely that many grade 10 students who plan to attend university will first enroll in a community college program.

Table 4.6
Summary: Grade 10 Students' Postsecondary Plans

Plan to ...	Percent of Students
Attend university	36.2
Attend community college	14.6
Attend technical institute	9.6
Look for a job	8.8
Attend business school	3.7
Other plans	8.5
Undecided	17.8
Don't plan to finish high school	0.7

4.3 Associations Among Background Characteristics

At each grade level, a 10% random sample of student responses--approximately 3000--were analyzed to examine associations among selected background variables. These analyses were undertaken in order to enhance description of the population, to identify and describe specific subpopulations, and to provide a basis for investigating the role of background characteristics in predicting student achievement.

4.3.1 Biodemographic Characteristics and Instructional Assistance

Students at all grade levels responded to the question, "Do you sometimes go to learning assistance for special help?" As well, they were asked to indicate whether they had ever attended ESL classes, and if they were currently attending ESL classes.

Table 4.7 shows the percent of students by gender, first language, and current home language who report that they are currently receiving learning assistance. (Population figures were presented in Table 4.3 which shows 18%, 11%, and 9% of students receive learning assistance at the respective grade levels). Table 4.7 shows that male students are slightly more likely than female students to receive learning assistance in grades 4 and 7, but not at grade 10. Students for whom English is a second language, however, are more likely than those for whom English is a first lanaguage to receive learning assistance at grades 7 and 10, but not at grade 4. A relatively high proportion of English-second-language (ESL) students whose current dominant home language is not English, are currently receiving learning assistance at all grade levels. When the data are viewed from a slightly different perspective, they indicate that the current learning assistance population at grade 4 is 55% male, 15% ESL with 9% who do not speak English in their homes; at grade 7, 56% are male, 15% ESL, and 11% do not speak English at home; at grade 10, 54% are male, 10% ESL, and 10% do not speak English at home.

Table 4.7
Percent of Students Currently Attending
Learning Assistance by Gender and Language Background

Attend learning assistance	Percent of Students					
	Gender		First language		Home Language	
	M	F	English	Other	English	Other
Grade 4						
Yes	20	16	18	19	17	22
No	80	84	82	81	83	78
Grade 7						
Yes	13	10	11	13	11	19
No	87	90	89	87	89	81
Grade 10						
Yes	10	9	9	11	9	13
No	90	91	91	89	91	87

Table 4.8 deals specifically with those students who do not speak English as a first language, and shows both current status in terms of instructional assistance, and total ESL experience. It is interesting to note that grades 4 and 7 second language students are more likely to be assigned to learning assistance than to ESL classes, while their grade 10 counterparts are not. Further, within the population of second language students, current home language is much more strongly associated with special assistance in grade 4 and 7, than in grade 10. When all ESL class experience is considered, between 29 and 33% of all second language speakers have at sometime attended ESL classes, compared with 42 to 47% of those who do not speak English at home.

The data presented here indicate that at grade 4, 10% of the total student population speak English as a second language, and have never participated in ESL classes; the same is true of 9% of all grade 7 students, and 11% of grade 10 students. Between 4 and 5% of the total student population at each grade consists of students in whose homes English is not the dominant language, and who have never participated in ESL classes.

Table 4.8
Summary: Instructional Assistance for Students
Who Speak English as a Second Language

Language/Instruction	Percent of Students		
	Grade 4	Grade 7	Grade 10
All English Second Language			
Current ESL class	11	10	9
Current learning assistance	19	13	11
No current special instruction	70	77	80
English Not Spoken at Home			
Current ESL class	18	15	14
Current learning assistance	22	19	13
No current special instruction	60	66	73
All English Second Language			
Current/former ESL class	29	33	29
No ESL class	71	67	71
English Not Spoken at Home			
Current/former ESL class	42	44	47
No ESL class	58	56	53

4.3.2 Biodemographic Characteristics and Leisure Activities

Table 4.9 and 4.10 summarize the relationships between leisure activities, and biodemographic and sociocultural characteristics. Table 4.9 presents within-gender response distributions for five questions about leisure behaviour at each grade level.

As shown in Table 4.9, male students at every grade level report more television viewing than do female students. At grade 4, 58% of boys and 46% of girls reported watching television for 2 hours or more on the previous day; analogous figures at grade 7 are 63% and 55%; at grade 10, 65% and 48%. It is interesting to note that time spent watching television increases with grade level for boys, while for girls, it appears to peak at grade 7 and then decline by grade 10. Gender differences reach greatest magnitude at grade 10, but are statistically significant at all grades.

Table 4.9
Summary: Leisure Activities by Gender within Grade Level

Variable/Value	Percent of Students					
	Grade 4		Grade 7		Grade 10	
	M	F	M	F	M	F
TV yesterday						
None	14	19	12	14	12	19
<1 hour	13	18	12	14	12	16
1 hour	15	17	13	17	11	17
2 hours	16	19	19	22	24	22
3 hours	13	10	18	15	20	15
4+ hours	29	17	26	18	21	11
Preferred activity						
Game or sport	49	37	59	35	61	36
TV	21	22	20	26	20	24
Book or story	9	22	9	26	8	23
Movie	19	18	10	10	7	14
Magazine	2	1	2	3	4	3
Least desirable activity						
Game or sport	8	9	4	9	14	7
TV	15	15	9	11	14	8
Book or story	21	15	33	19	23	48
Movie	21	26	29	34	32	26
Magazine	35	35	25	27	18	11
Reading yesterday						
None	34	31	26	20	23	29
<1/2 hour	25	26	30	24	26	31
1/2-1 hour	24	24	28	31	28	25
1-2 hours	10	11	11	16	16	11
2+ hours	7	8	5	9	7	4
Library books last month						
None	8	5	9	8	35	27
1-2	14	15	19	19	31	27
3-5	20	21	31	28	22	25
6-10	22	26	22	23	8	12
10+	36	33	19	22	4	9

For two items which required students to select the activities they would be most and least likely to choose, given several hours of free time, gender differences, significant at all grades, were most dramatic at grade 10. Students at all grades most often selected play a game or sport as their preferred activity. More boys chose this response with each subsequent grade level; the proportion of girls, however, remained constant. Differences were more pronounced for least preferred activities. At grade 4, only slight differences between boys and girls appeared; both most often identified reading a magazine as least likely. At grade 7, reading a book or story was identified as least likely by 33% of boys, while girls were more likely to reject attending a movie. By grade 10, however, the pattern reversed: nearly one-half of female students identified reading a book as their least likely leisure activity--more than twice as many as male students--while their male counterparts were most likely to reject attending a movie. When response patterns to these two items are considered together, a high degree of polarity is apparent at grade 10. For boys, it is related to games/sports, with 61% selecting these as preferred, and 14% as least appealing. For girls, the polarization involves reading, with 23% selecting it as preferred, and 48% as least appealing.

The next set of entries in Tables 4.9 offers confirmation of these findings. At grade 4, there were no significant differences between the amount of time spent reading reported by girls and boys. At grades 7 and 10, gender differences were substantial and significant. However, while at grade 7, girls reported greater amounts of time spent reading, the differences favoured boys at grade 10. At grade 4, 17% of boys and 19% of girls reported reading for one hour or more; at grade 7, 16% of boys and 25% of girls fell into this category, while at grade 10, 23% of boys and 15% of girls reported more than an hour of reading. Overall, then, grade 10 girls and grade 7 boys are least likely to read extensively. Coupled with the results described above for preferred activities, these data indicate that during the intermediate grades most boys find reading of little interest; during the junior secondary grades, however, many more of them become engaged in reading as a leisure activity. For girls, the reverse is true. Whether this difference is related to curriculum and instructional differences between intermediate and junior secondary grades is a question worthy of serious consideration.

The final entries in Table 4.9 deal with library use; specifically, the number of books borrowed within the last month. At grade 4 and 7, there are no substantial differences attributable to gender. At grade 10, however, girls report significantly higher library use than do boys; in fact, nearly twice as many girls as boys--21% versus 12% reported borrowing more than six books in the previous month.

In the interests of economy, Table 4.10 indicates only presence/absence of significant associations between language background, reading materials in the home, parental education, and leisure activities. At all grade levels, the number of books in a students' home is negatively associated with amount of television watched but positively associated with the choice of reading as a preferred activity, with amount of reading, and with library use. At grade 10, the same pattern of associations appears for level of parental education.

Table 4.10
Summary: Significant Associations between Background Characteristics and Leisure Activities

Leisure Variable	Background Variable	Significant Associations[a]		
		Grade 4	Grade 7	Grade 10
TV yesterday	Language (English)	none	(+)	none
	Books in home	(-)	(-)	(-)
	Parents' education	n/a	n/a	(-)
Preferred activity	Language (English)	none	(-)	none
	Books in home	(+)	(+)	(+)
	Parents' education	n/a	n/a	(+)
Reading yesterday	Language (English)	none	none	none
	Books in home	(+)	(+)	(+)
	Parents' education	n/a	n/a	(+)
Library use	Language (English)	none	(-)	(-)
	Books in home	(+)	(+)	(+)
	Parents' education	n/a	n/a	(+)

[a] (+) indicates a significant positive association; (-) a significant negative association; parental educational levels were not available at grades 4 and 7.

Not surprisingly, students who live in homes with extensive amounts of reading material and whose parents have completed relatively high levels of formal education are more likely to report higher engagement in leisure reading activities and lower amounts of television viewing.

Language background--English versus other--shows no associations with leisure activities at grade 4. At grade 10, it is associated only with library use: students for whom English is a second language report borrowing more books. At grade 7, however, language background displays several significant relationships with leisure behaviour. Students whose first language is English watch more television, are less likely to select reading a book as a leisure activity, and report less library usage than do their counterparts who speak English as a second language.

4.3.3 Reading Activities and Postsecondary Plans

Grade 10 students were asked to identify their probable choice among postsecondary alternatives. The response distribution for the population was described earlier in section 4.2.5. A random sample of 3000 responses was analyzed to examine associations between leisure reading activities and future plans; results are shown in Tables 4.11 and 4.12.

Table 4.11
Summary: Associations between Reading Materials in the Home and Postsecondary Plans

Postsecondary Plans	Percent of Students		
	<100 books	>100 books	Combined
University	27	38	35
Other education/training	34	27	29
Workforce	12	9	10
Other/undecided	27	26	26
	100	100	100

Table 4.11 summarizes the relationship between reading materials in the home and student aspirations. The significant association between these variables is due to differences between students who plan to attend university and those who intend other postsecondary education. Students who have more reading materials in their homes are more likely to plan university attendance, while those with fewer reading materials are more likely to plan other postsecondary education or training.

Table 4.12 summarizes selected leisure reading characteristics of four groups of students as defined by their postsecondary plans. For each variable shown in Table 4.12, students who plan to attend university demonstrate substantially more interest in leisure reading activities than do other students. Those who plan to enter the workforce directly show substantially less. The most striking differences include:

- 45% of the work-oriented students find reading the least appealing of activities, compared with 29% of the university-bound and 36% of the total sample;
- 38% of the work-oriented students reported no leisure reading on the previous day, compared with 18% of university-bound and 26% of the total sample; and
- 10% of the work-oriented students and 21% of the university-bound reported recent extensive library use, compared with 16% of the total sample.

These associations are not unexpected; however, the magnitude of the differences is striking. It is important to keep in mind that these students are more than two years away from high school graduation; responses thus represent relatively long range plans. Further, it should be kept in mind that these questions dealt specifically with leisure reading, not with school assignments. The results suggest that the emphasis which many language arts and English teachers place on enjoyment of reading is well-founded. Recreational reading is clearly associated with academic aspirations.

Table 4.12
Summary: Associations between Leisure Behaviour and Postsecondary Plans

Variable/value	Percent of Students				
	Univ	Other Educ	Work	Undec	Combined
Preferred activity:					
Reading books	21	15	10	10	15
Other	79	85	90	90	85
Least appealing:					
Reading books	29	38	45	38	36
Other	71	62	55	62	64
Reading yesterday:					
None	18	26	38	31	26
<1 h	58	56	53	53	56
>1 h	24	18	9	16	18
Library books:					
None	25	31	38	37	31
1-2	28	29	34	30	30
3-5	26	27	18	19	23
>5	21	13	10	14	16

4.3.4 Other Associations among Background Variables

Previous sections have described selected associations among background variables. The relationships reported here represent only a small proportion of the possible combinations of these variables. For the most part, only those relationships which demonstrated significant differences among subgroups and which have implications for instructional practice or for subsequent analyses have been described. Clearly, for example, the individual leisure activity items share a great deal of variance. Relationships among the set of background variables are complex; inferential analyses reported in Chapter 6 attempt to illuminate these.

4.4 Affective Variables

The 1984 Advisory Committee assigned highest priority to objectives associated with attitudes toward reading, and strongly suggested that, in addition to the Estes Reading Attitude Scale (Estes, Johnstone & Richards, 1975) administered in 1980, the assessment surveys include questions and scales designed to provide more detailed information. Consequently, within each grade level, each test form included a different set of affective questions. Items and scales were held constant across the three grade levels and included: the Estes Reading Attitude Scale (ERAS); the Value of Reading Scale (VRS); the Reading Enjoyment Scale (RES); and a set of open-ended questions dealing with preferred reading materials and the value of reading (on Form Q).

4.4.1 The Estes Reading Attitude Survey

The Estes Reading Attitude Survey (ERAS) was previously administered to grades 4, 8, and 12 students in the 1980 Reading Assessment. The scale consists of 15 statements about reading, with a 5-option Likert response scale. The scale anchors range from Strongly Disagree to Strongly Agree; 10 items are negatively worded, and 5 are positive. The Estes Scale is perhaps the most widely-used of all reading attitude measures. Previous research has established its reliability and validity (see, for example, Dulin & Chester, 1974; Estes et al., 1975; Tuinman & Kendall, 1980). Although it was designed for use at the upper elementary and secondary levels, data from the 1980 B.C. Assessment support its use at grade 4.

The Estes scale is unidimensional--that is, no useful subscale structure is apparent; student attitude is represented by a single score (see Chapter 2 for a discussion of the factor structure of the scale). Scores are typically reported as raw scores, ranging from 15 (extremely negative) to 75 (extremely positive) or as mean scale scores ranging from 1 (extremely negative) to 5 (extremely positive).

In summarizing B.C. student performance in 1980, Tuinman & Kendall reported the percent of students whose raw scores fell into the following categories:

1. Extremely negative (15-26)
2. Negative (27-38)
3. Neutral (39-50)
4. Positive (51-62)
5. Extremely positive (63-75)

The definitions above create five equal raw score intervals and were used to prepare the comparative data shown in Table 4.13. This table has been prepared only to facilitate comparisons over time. The practice of creating five equal intervals from a scale with five defined anchors can only be defended in statistical terms; it is particularly inappropriate for reporting results to field personnel and the general public. Most readers, examining data such as that presented in Table 4.13, will quite logically assume that, at each grade level, over 20% of students chose the most positive response available for most items and that their mean item response was at or above 4.5 on a 5-point scale. This is not the case. At each grade, less than 10% of students preferred the extremely positive response. The selection of 63 as the lower limit of this interval means that all students whose mean item score exceeded 4.2 on a 5-point scale are described as "Strongly positive," in spite of the fact that many of them only occasionally selected the most positive response available.

Table 4.13
Estes Reading Attitude Survey:
Results by Grade for 1980 and 1984

Grade/Year	Strongly Negative	Negative	Neutral	Positive	Strongly Positive
Grade 4: 1984	2	5	25	47	21
Grade 4: 1980	1	5	22	45	28
Grade 7: 1984	1	6	21	48	24
Grade 8: 1980	2	8	25	45	20
Grade 10: 1984	3	10	19	46	22
Grade 12: 1980	1	5	19	48	27

The data presented in Table 4.13, then, are valid only for the purpose of comparisons. They suggest that ERAS scores are relatively stable over both time and grade. Apparent differences over time include:

1. A slight downward shift in grade 4 scores;

2. In 1984, grade 7 scores tended to be highest among the grade levels tested; in 1980, grade 8 scores were lowest; and,

3. The 1984 grade 10 scores were somewhat lower than 1980 grade 12 scores; in fact, the distribution resembles that for 1980 grade 8 students. In terms of attitude, then, it may well be that the grade 10 students are more like their younger fellow junior secondary students, than their older senior secondary counterparts.

For the balance of this report, ERAS scores will be reported as raw total scores. At each grade, between 9500 and 11 500 students completed the ERAS which appeared on Form S. Mean scores were 55.0, 54.6, and 53.7 for grades 4, 7, and 10 respectively.

4.4.2 Perceived Value of Reading for Different Purposes

Students at each grade level were asked to indicate how useful they perceived reading to be for a series of ten purposes. For each function stated, students selected one of five anchored responses: Very Useful; Quite Useful; Can't Decide; Not Very Useful; Not at All Useful. Response values from 1 to 5 were assigned with 5 indicating an extremely high value (Very Useful) and 1 associated with an extremely low value.

Mean item-values for each grade are shown in Table 4.14. (See Appendix D for response item-level distributions.)

Table 4.14
Perceived Value of Reading:
Item Scale Values by Grade

Item	Mean Scale Value		
	Grade 4	Grade 7	Grade 10
Reading is useful for...			
- helping get better marks	4.5	4.3	3.9
- learning about the future	4.2	4.1	4.0
- improving own writing	4.2	4.3	3.9
- learning about new discoveries and inventions	4.1	4.0	4.1
- understanding and solving own problems	4.1	3.8	3.5
- helping make, fix, or operate something	4.0	4.2	4.3
- learning about famous people and important events	3.9	4.1	4.1
- relaxing, enjoying spare time	3.8	3.8	3.8
- understanding more about the way you feel and act	3.7	3.5	3.8
- understanding more about how other people feel and act	3.6	3.3	3.4

Note: 5 = Very Useful; 1 = Not at All Useful.

Overall, students perceived reading as a valuable activity with individual item means ranging from 3.6 to 4.5 at grade 4, from 3.3 to 4.3 at grade 7, and from 3.4 to 4.3 at grade 10. When individual items are examined, however, there are clear differences by grade:

1. Elementary grade students perceive leisure reading as extremely useful for improving school achievement and their own writing; grade 10 students assign both lower scale values and a lower ranking to these items;

2. **The perceived usefulness of reading for understanding and solving students' own problems declines dramatically as grade level increases; and,**

3. **The usefulness of reading for helping to make, fix, or operate something or for learning about famous people and events shows a slight increase with grade level.**

The mean scale value of 3.8 for reading as a means of relaxing and enjoying spare time is unchanged by grade level. Further, at all grade levels, reading is perceived as least useful for understanding more about how others feel.

As described in Chapter 2, this scale was designed to provide subscale scores and the subscale structure confirmed through factor analyses of item responses. Subscale scores for the perceived value of reading to acquire information, to enhance achievement, to increase understanding, and to derive pleasure were constructed by averaging over relevant item scores. Mean subscale values are shown in Table 4.15. Relationships among the VRS, background and achievement which appear in Chapter 6 are based on these scores.

Table 4.15
Value of Reading Scale: Mean Subscale Scores by Grade

	Mean Scale Value		
Subscale	Grade 4	Grade 7	Grade 10
Belief in the value of reading to...			
1. Enhance achievement	4.4	4.3	3.9
2. Acquire information	4.1	4.1	4.2
3. Derive enjoyment	3.8	4.0	4.0
4. Increase understanding	3.8	3.5	3.6

These results are consistent with those reported by Neuman (1980) who examined student responses to the essay topic "Why I like to read," and found that the pattern of responses changed between grades 7 and 8: grades 8 and 9 students were much less likely to cite enhanced school achievement as a reason for reading. Neuman found no support for the hypothetical transition from "learning to read" to "reading to learn," suggesting that student interest in using reading for learning may peak as early as grade 6 (p. 336). The B.C. students described here apparently maintain a stable belief in the value of reading to acquire information; older students, however, are less likely to perceive such learning as a means of improving school achievement.

4.4.3 Preferences for Leisure and School-Related Reading Materials

A third set of affective items attempted to identify student attitudes toward various types of reading materials including assigned literature and content area textbooks. First, students were asked how much they liked various materials--novels, comic books, biographies--when these were self-selected. The 5-point response scale anchors ranged from Never Read Them to Like Them Very Much. The next 5 items related to assigned materials. For these items five response options were provided: Like Them Very Much; Sometimes Like Them; Can't Decide; Usually Don't Like Them; and Don't Have Textbook/material.

For the first set of 7 items, mean scale values were calculated ranging from 1, Never Read Them to 5, Like Them Very Much. For the last 5 items, mean scale values ranged from 1, Usually Don't Like Them to 4, Like Them Very Much. The percent of students who reported no textbook or assigned reading in each category is reported separately. These data are summarized in Tables 4.16 and 4.17; item-level response distributions are given in Appendix D.

As shown in Table 4.16, predispositions toward fiction and the three listed categories of nonfiction are stable across the three grade levels. Short stories and novels are the most popular of these; response distributions displayed in Appendix D show that 77%, 75% and 83% of grades 4, 7, and 10 students, respectively, indicated that they liked these materials very much or sometimes.

Table 4.16
Summary of Results: Predisposition toward Various
Types of Reading Material

Material		Mean Scale Value		
		Grade 4	Grade 7	Grade 10
Fiction		4.0	4.2	4.1
Nonfiction:	biography	3.4	3.4	3.4
	"how-to"	3.3	3.1	3.1
	other nonfiction	3.6	3.6	3.6
Magazines		3.3	4.0	4.3
Comic Books		4.4	3.9	3.2
Newspapers		2.8	3.4	3.8

Note: 5 = Like Them Very Much; 1 = Never Read Them

As anticipated, grade-level differences were most apparent for newspapers, magazines and comic/cartoon books. Overall, grade 4 students preferred comic/cartoon books to all other materials and assigned lowest ratings to newspapers. Preference for both magazines and newspapers increased with grade level, while ratings for comic/cartoon books decreased. At grade 10, magazines received the highest rating; at grade 7, fiction was most popular. Grade 7 and 10 students assigned their lowest ratings to "books that tell you how to make, fix or operate something;" grade 4 students, to "newspapers." When the response distributions in Appendix D are examined, the least frequent response for most items at all grade levels is "Can't Decide," except for the three non-fiction items. Students at all grade levels apparently have clear and definite opinions about types of reading material.

Table 4.17 summarizes student perceptions about school-assigned reading, and indicates the percent of students who reported no assigned textbook or reading in various categories.

Table 4.17
Summary of Results: Perception of School-related Materials by Grade

Material	Mean 4-Point Scale Value[a]		
	Grade 4	Grade 7	Grade 10
novels	3.2	2.9	2.8
reader/short stories	3.1	2.6	2.7
poetry	2.9	2.4	2.3
science	2.7	2.5	2.2
social studies	2.8	2.6	2.1

Percent of students who report no textbook or assigned school reading in each category:

	Grade 4	Grade 7	Grade 10
novels	3.7	2.3	0.8
reader/short stories	2.9	4.5	3.2
poetry	7.7	17.4	10.6
science	9.3	6.5	3.8
social studies	29.3	13.5	4.3

[a] 1 = don't like them; 2 = can't decide; 3 = sometimes like them; 4 = like them very much.

Students at all grades who reported school-related use of the various materials assigned highest qualitative ratings to novels, followed by current reader at grades 4 and 7; short stories at grade 10. While grades 4 and 10 students ranked poetry third, grade 7 students assigned it the lowest ratings among the materials listed. Overall, students assigned higher ratings to literature/language arts materials than to content area textbooks. As well, ratings for all materials declined as grade level increased, with the greatest differences apparent between grades 4 and 7 ratings of readers and poetry.

Table 4.17 reports the percent of students who do not read or use the listed materials in school, and includes some startling data: over 17% of grade 7 students, and more than 10% of grade 10 students reported that they do not read poetry in school. It seems virtually inconceivable that in one out of every six grade 7 classrooms, and in one out of every ten grade 10 English classes, no poetry is read.

4.4.4 Open-ended Responses

At each grade level, 4% of students--typically one per classroom--responded to affective and achievement items by constructing rather than selecting their responses. Achievement results are presented in Chapter 5. Three items focused on student preferences, behaviour, and values:

1. What do you usually like to read?

2. What was the most recent book, magazine or newspaper you read in your spare time?

3. List two ways that reading is important to you.

At each grade level, a random sample of 320 student response booklets was drawn, representing approximately 1% of the total student population. Student responses were classified and coded using standard content analysis techniques.

Table 4.18 displays the percent of students who identified each of the categories as the material they usually like to read; Table 4.19 summarizes the classification of titles the students listed as the most recent book, magazine, or newspaper read during their spare time. For both tables, student responses were classified to the most specific level possible; thus, for example, a children's mystery story would appear as "mystery." When asked what they usually like to read, many students simply replied "fiction," "nonfiction," or "magazines;" where they specified a subcategory such as "romance novels," it was assigned to the more specific level. For the question about most recent reading, students provided actual titles; these were classified in consultation with children's librarians, classroom teachers, and actual holdings in the Richmond and Vancouver Public Libraries.

Results presented in Tables 4.18 and 4.19 are congruent with those described earlier in this Chapter; at all grades, girls were more likely to identify fiction as both their preferred and most recent reading material; conversely, boys more often identified nonfiction, magazines, newspapers, and comicbooks. Overall, interest in fiction appears to decline between grades 7 and 10, while interest in magazines, nonfiction, and newspapers increases. At grade 4, 26% of boys reported that they usually liked to read comicbooks; 16%, that they had most recently read a comicbook. These percentages declined sharply with age.

Table 4.18
Summary: Preferred Leisure Reading Material by Gender within Grade: Percent of Responses per Category

Category	Grade 4		Grade 7		Grade 10	
	M	F	M	F	M	F
Fiction						
General/not specified	30.3	41.0	36.4	53.6	24.8	50.0
Mystery	19.9	23.1	10.7	7.5	3.5	7.3
Science Fiction	—	0.6	7.4	1.1	14.9	2.4
Romance	—	0.0	0.0	12.6	0.0	9.1
Adventure	5.5	5.8	4.1	4.6	7.8	4.9
Horror	—	—	—	—	0.7	1.8
Fantasy	3.1	4.5	—	—	2.8	0.0
Animal Stories	—	1.9	—	1.7	—	—
Children's/Youth	1.7	4.5	2.5	0.6	0.0	0.6
Humour	1.6	4.5	0.8	1.1	0.7	1.8
COMBINED	62.1	85.9	61.9	82.8	55.2	77.9
Magazines						
General/not specified	2.4	2.6	14.0	5.7	17.7	12.8
Sports	—	—	4.1	0.6	5.0	0.0
Humour	0.8	—	—	—	1.4	0.0
Children's/Teen	0.8	—	0.8	0.6	0.0	0.6
Motor/car	—	—	—	—	1.4	0.0
COMBINED	4.0	2.6	18.9	6.9	25.5	13.4
Nonfiction						
General/not specified	5.5	0.6	5.0	3.4	7.1	3.0
Animals	2.4	1.9	0.0	1.1	—	—
Sports	—	—	0.8	0.6	1.4	0.6
Biography	—	—	—	—	0.7	—
COMBINED	7.9	42.5	5.8	5.1	9.2	3.6
Newspapers	—	4.5	2.5	0.6	8.5	2.4
Comicbooks	26.0	4.5	6.6	1.7	1.4	0.6
No Response	—	—	4.3	2.9	0.2	2.1

Table 4.19
Summary: Most Recent Reading Material by Gender within Grade: Percent of Responses per Category

Category	Grade 4		Grade 7		Grade 10	
	M	F	M	F	M	F
Fiction						
General/not specified	9.7	13.2	14.0	25.9	18.8	26.5
Mystery	15.3	13.2	9.1	6.3	4.3	6.8
Science Fiction	--	--	6.6	1.1	6.5	2.5
Romance	--	0.7	0.0	15.5	0.0	8.0
Adventure	2.4	0.7	3.3	4.0	0.7	1.2
Horror	--	--	--	--	1.4	4.3
Fantasy	5.6	11.3	8.3	2.9	5.1	1.9
Animal Stories	1.6	3.3	6.6	3.4	--	--
Children's/Youth	12.1	19.9	3.3	5.2	1.4	7.4
Humour	0.0	4.0	0.8	2.3	--	--
COMBINED	46.7	66.3	52.0	68.3	38.2	58.8
Magazines						
General/not specified	8.1	10.0	11.6	7.5	12.3	10.5
Sports	0.8	--	6.6	0.6	10.9	0.0
Humour	3.2	0.7	0.0	0.0	0.7	0.0
Children's/Teen	4.0	3.3	0.0	6.3	2.9	9.9
Motor/car	--	--	2.5	0.0	5.8	0.0
COMBINED	16.1	14.0	20.7	14.4	32.6	20.4
Nonfiction						
General/not specified	4.8	2.0	4.1	2.3	10.1	6.2
Animals	3.2	1.3	0.0	1.7	0.7	0.6
Sports	0.8	--	1.7	1.1	1.4	0.6
Biography	0.8	0.7	0.0	1.1	2.2	3.1
Technology	0.0	0.0	0.0	0.0	0.7	0.0
COMBINED	9.6	4.0	5.8	6.2	15.1	10.5
Newspapers	9.7	7.3	9.1	5.2	12.3	9.3
Comicbooks	16.1	7.9	3.3	1.1	1.4	0.6
No Response	1.8	0.5	9.1	4.8	0.4	0.4

Age and gender differences were also apparent for subcategories. Grade 4 boys most often specified "mysteries" within the fiction category; girls more often described children's stories. At grades 7 and 10, the greatest proportion of fiction readers described books falling into the "general" category; many of these were authorized titles from the B.C. curriculum, such as To Kill a Mockingbird or Animal Farm. Apparently, these students were using their "spare time" to complete assigned reading. The most frequently identified specific category of fiction for grade 7 girls was "romance;" many titles from the Sweet Dreams series (Harlequin Romances for young girls) were listed. For both boys and girls, interest in mysteries decreased as grade level increased; however, for girls, this decline ended at grade 7. Younger girls showed a strong interest in fantasy/fairytales which had dissipated by grade 7; the pattern across grades is more stable for boys.

Among the subcategories of magazines, "Sports" appeared more often for older boys, along with "Motor/car" magazines. Grades 7 and 10 girls were more likely to mention magazines directed at a teenage audience.

It is worth noting that data presented in Tables 4.19 and 4.20 suggest that reading interests among male students are more diverse than those of their female counterparts. This finding has implications for materials and strategies required for strong recreational reading programs.

The final open-ended item about reading habits asked students to list two ways in which reading was important to them. Responses are summarized in Table 4.20 which presents the percent of responses which fell into each of the categories by gender within grade level.

At all grades, the most frequent responses dealt with reading as a means of obtaining information, of improving language skills--particularly reading skills and vocabulary--and of deriving enjoyment. Although response patterns were surprisingly stable across genders and grade levels, some differences were apparent. Grade 4 students and grade 10 boys were most likely to identify reading as a means of obtaining information, and grade 7 boys as a means of improving language skills. At grade 4, it is interesting to note that only 14% of boys--as compared with 22% of girls--identified reading as important for developing language skills. At all grades, boys were somewhat more likely than girls to see reading as a means of stimulation (e.g., "It makes your brain work"), while girls were more likely to view it as escape, particularly at grade 10.

Few students listed functional aspects of reading (getting a job, reading directions, shopping, etc.), reading to understand others, or reading to improve school achievement in areas other than language. Somewhat surprisingly, a few students at each grade level reported that reading was important as it improved their eyesight.

Table 4.20
Summary: Importance of Reading by Gender within Grade:
Percent of Responses per Category

Category	Grade 4		Grade 7		Grade 10	
	M	F	M	F	M	F
Obtain information	32.2	28.3	20.3	21.9	27.0	20.8
Improve language/ reading skills	14.4	22.0	24.2	21.5	17.9	21.9
Enjoyment	15.9	18.3	17.8	15.5	15.6	15.6
Fill time	5.6	5.0	12.8	10.6	8.7	9.0
Escape	0.7	1.2	3.8	7.2	3.8	12.0
Stimulation	5.2	2.8	4.2	4.1	6.9	3.0
Functional	2.6	3.1	4.6	2.6	4.2	2.1
Understand others	2.6	3.1	1.2	4.3	3.8	4.2
Improve marks	3.7	5.6	2.9	3.4	1.4	0.3
Other	4.2	5.6	2.8	1.2	3.0	0.3
Missing	11.9	5.0	5.4	4.6	6.2	4.2

4.4.5 Summary

Results of the four sets of affective items provide an interesting picture of B.C. student attitudes and values:

1. Overall, students displayed positive attitudes toward reading. These appear to be relatively stable over grade level and time;

2. Students at all grade levels assigned higher values to reading as a means of acquiring knowledge and skills than as a way of increasing understanding of self and others. Perceived value of reading to acquire knowledge increases with grade level, while perceived value of reading to understand self and others decreases;

3. When students, themselves, supplied reasons why reading is important, they most often mentioned acquiring information, improving language skills, and enjoyment. Few students at any grade level mentioned reading as a means of understanding self or others;

4. At all grades, B.C. students displayed positive attitudes toward reading fiction; they showed lower degrees of predisposition toward non-fiction materials. These results were congruent with response to open-ended questions;

5. Preference for comic/cartoon books, extremely high among grade 4 boys declines markedly with grade level, while interest in newspapers and magazines increases. At grade 10, magazines received the highest rating of the materials listed. On the open-ended questions, grade 10 boys reported a high degree of preference and extensive recent reading of magazines;

6. Among school-related materials, students at all grades displayed the most positive attitudes toward those associated with English/Language Arts; the least positive toward content area textbooks. The one exception occurs at grade 7, where students rated poetry below all other materials;

7. Few students report not reading novels, readers/short stories, or science texts in school. The use of social studies texts, relatively low at grade 4, increases dramatically with grade level; and

8. Substantial proportions of students reported that they do not read poetry in school; 8% at grade 4; 17% at grade 7; and, 11% at grade 10. This is an unanticipated result.

CHAPTER 5

OPEN-ENDED RESPONSES

5.1 Overview

This chapter describes procedures and results for achievement items which required students to construct, rather than select, their responses. Items, rating scales, and response distributions are presented along with item-level results in the form of percent of responses judged to satisfy criteria for "minimally acceptable" and "desirable." Results are organized by stimulus passage within grade-level. A final section of this chapter examines associations among responses to the open-ended items.

5.2 Sampling

Open-ended responses were solicited from a 4% provincial sample of students--typically, one student per classroom. Completed answer booklets were returned for 1392 grade 4 students, 1499 grade 7 students, and 1201 grade 10 students. Booklets which contained these items were designated "Form Q." At each grade level, these were interleafed with the other achievement survey forms to ensure that they would be randomly distributed. There was some concern that instructions for distribution may not have been followed in all classrooms. Consequently, background information for students who completed the Q-forms was compared with that for the total population. Selected results of these analyses are shown in Table 5.1.

At all grades, a gender bias is apparent: girls were more likely to receive the Form Q than were boys. At grades 4 and 10, the difference is relatively small. At grade 7, however, it is substantial: while 51% of participants in the assessment were male, only 41% of those who completed the Form Q were male. It is clear that in many grade 7 classrooms, students were systematically selected to write Form Q, rather than receiving booklets randomly as per instructions. At grade 4, the Form Q sample is comparable to the total sample on most variables. The one exception is participation in learning assistance--it appears that many students with learning difficulties were excused from completing this form. This was not unexpected; where a student was experiencing severe difficulties it may well have been in the child's best interest to eliminate the additional frustration of providing written responses. At grade 10, apart from the gender bias noted above, the Q-form sample reflects population characteristics.

At grade 7, in addition to the substantial gender bias described above, the Form Q sample appears to be biased in terms of sociocultural background (books in home), learning assistance, ESL assignment, and leisure reading behaviour. Results of the open-ended responses for grade 7, then, are likely to be spuriously high as population estimates. The problem is less severe for grades 4 and 10.

Table 5.1
Comparison of Selected Characteristics of Form Q Sample
with Those of Total Sample: Percent of Students Within Each Category

Variable/Value	Grade 4		Grade 7		Grade 10	
	Q	All	Q	All	Q	All
Gender: male	46	50	41	51	46	50
female	54	50	59	49	54	50
First language: English	86	86	87	87	84	84
other	14	14	13	13	16	16
Home language: English	93	91	95	93	94	93
other	7	9	5	7	6	7
Books in home: <100	26	29	19	25	24	24
>100	74	71	81	75	76	76
School size: <150	10	10	8	7	1	1
150-599	88	88	88	90	36	35
>599	2	2	4	3	63	64
Learning Assistance: Yes	6	18	4	11	8	9
No	94	82	96	89	92	91
ESL ever: Yes	6	7	3	6	8	7
No	94	93	97	94	91	93
ESL now: Yes	2	3	1	2	2	3
No	98	97	99	98	98	97
Reading yesterday: None	24	33	17	24	23	26
<1 hour	57	50	52	55	57	55
>1 hour	19	17	31	21	20	19

Post-stratification procedures were used to correct for the gender bias in the sample; results reported here have been adjusted so that males' and females' responses make an equal contribution. That is, all analyses were completed separately for boys and for girls. These were then weighted--.50 for both groups at grades 4 and 10; .51 for boys and .49 for girls at grade 7--and combined to produce population estimates.

5.3 Scoring and Interpretation

Analyses of student responses was designed to provide three types of information:

1. The specific nature of student response to the tasks given: What were the most frequent responses to a given task? What do the patterns of response reveal about the processes in which students are engaged? Such information is developed through use of classification systems and is descriptive rather than evaluative.

2. The proportion of students who provided each of several qualitatively different categories of response: What broad categories of response can be identified? How many students fell into each category? For relatively simple tasks, responses may simply be assigned to "acceptable" or "unacceptable" according to predefined characteristics. More complex tasks required several "scale-points" or categories--as many as can be reliably distinguished by teachers at that grade level. These rating scales describe relative quality of student responses.

3. The proportion of student responses which exceeds a given standard: What is an acceptable level of performance? How many students have attained it? Expert judgement is required in order to set a performance standard for each task, by defining "minimally acceptable" or "satisfactory" performance in terms of the relevant rating scale.

A rating scale was developed for each item, using approximately 100 actual student responses to derive qualitative scoring categories. At the same time, for some items, classification systems were developed for use in recording the nature--as opposed to the quality--of student responses.

During the Interpretation Panel meetings, groups of Panelists used the rating scales and sample student responses to define "minimally acceptable" and "desirable" responses for each item. Later, the teams of markers independently determined similar standards. The definitions of "minimally acceptable" were congruent in all cases; markers and Panelists agreed as to what constituted a "minimally acceptable" response to each item.

In early July, teams of elementary and secondary teachers scored the open-ended responses working under the direction of the Contract Team. For each grade level, a random sample of 320 completed student booklets was drawn. Student responses were photocopied, sample responses for each scale point selected, and a reliability sample of 40 papers drawn for each item. Packages developed for markers included: the relevant rating scale; background information; sample papers; a calibration package for practice scoring; and sets of papers to be marked including copies of the reliability sample papers. Following calibration, markers worked independently to sort papers according to the rating scale. All markers rated the reliability papers which were dispersed among the other papers; markers were not aware of which papers were included in the reliability samples. Interrater reliability coefficients ranged from .84 to 1.00; they are displayed at the bottom of the scales which appear in subsequent sections of this chapter. Several items were marked by a single rater; in such cases, interrater reliability is not relevant.

5.4 Open-ended Responses: Grade 4

Form Q included four stimulus passages: a narrative passage; a picture; an informative passage (natural science); and a poem. Eight items requiring open-ended responses were associated with these passages. Two of the passages, along with four items, appeared at grade 7 as well; they are discussed in section 5.5.

In ensuing sections, each item and its accompanying rating scale are presented along with response distributions. "Minimally acceptable" and "desirable" response levels are shown as broken lines. The average score (mean scale point) is shown below the rating scale, along with interrater reliability where appropriate.

5.4.1 Narrative Passage

Grade 4 students read a short story entitled, "The Broken Window" and responded to the questions shown in Figures 5.1 and 5.2. The first of these questions asked students to predict an outcome: as shown in Figure 5.1, 67.2% of grade 4 students were able to provide a "desirable" response; 90.8% of responses were at least "minimally acceptable." Approximately 95% of responses indicated a basic understanding of the events of the story and the respective roles of the main characters.

The second item, shown in Figure 5.2, required that students make inferences about the characters: which policeman would they prefer to deal with if they faced an unjust accusation? For this item, 50.3% of responses were judged "desirable;" 65.8%, "minimally acceptable." Typically, students whose responses fell below the "minimally acceptable" level appeared to have made an appropriate inference about the characters involved, but failed to substantiate it beyond a broad generalization, such as "He was nicer," and provided no direct reference to the story. Ninety-two percent of students selected Captain Lake, the more easily defensible choice; while only 8% chose Patrolman Parker. Student difficulties with this item may well reflect deficiencies in strategies for responding to questions, rather than in reading skills. Many grade 4 students appear to have had little experience in formulating responses which call for substantiation. Markers noted that such skill is often best introduced in oral discussion; then, reinforced through written assignments.

5.4.2 Picture Stimulus: Grade 4

Rating scales and response distributions for two items associated with a picture of a pioneer family meal are shown in Figures 5.3 and 5.4. Grade 4 students had little difficulty with these items which required them to select details indicating that there were trees nearby, and to identify differences between their own homes and that in the picture. For each of these items, more than 92% of students provided at least "minimally acceptable" responses. Students performed particularly well on the second item; as shown in Figure 5.4, 84% of responses exceeded the "desirable" level. Results for these items suggest that grade 4 students are able to make basic inferences from pictures; these skills are particularly relevant for early study in the content areas of science and social studies.

Q. WHAT DO YOU THINK HAPPENED TO MIKE AFTER THE POLICEMEN FOUND OUT THE TRUTH?

Basis of the scale: prediction; consistency with story; probability.

%	Rating	Description
67.2	6	Predicts consequences which involve Mike, are consistent with story, and are not wildly improbable.

-------------6--------------------DESIRABLE------------------------------------

23.6	5	Predicts consequences which are consistent with the story but extremely vague (e.g., "He got in deep trouble.").

-------------5---------------MINIMALLY ACCEPTABLE-----------------------------

1.8	4	Predicts consequences which are consistent with the story, but wildly improbable (e.g., "He went to jail for 20 years.").
2.4	3	Predicts outcome which is consistent with the story but does not involve Mike (e.g., "Ted would be able to see Mike's sister more.") or fails to answer in terms of consequences (e.g., "Mike would confess.")
1.0	2	Predicts outcome which is clearly inconsistent with story (e.g., "Mike got a reward." "Ted would pay for the window.").
3.7	1	Does not address the question. Fails to make a prediction.
0.3	0	No response.

Mean scale point = 5.41 Interrater reliability = .96

Figure 5.1 Rating Scale and Response Distribution for Grade 4: Predicts Outcome in a Narrative Passage

Q. IF SOMEONE ACCUSED YOU OF DOING SOMETHING YOU HADN'T DONE, TO WHICH POLICEMAN WOULD YOU RATHER TALK? WHY WOULD YOU CHOOSE HIM?

Basis of the scale: logic; consistency; substantiation of choice with details in the story.

Note that students may choose either character. Responses are to be evaluated in terms of the logic of the substantiation.

%	Rating	Description
50.3	5	Either cites characteristic which is clearly illustrated by the story ("He doesn't jump to conclusions;" "He checks everything") or names a less salient characteristic, but provides a logical reason.
	5	DESIRABLE
15.5	4	Answer focuses on role, rather than character (e.g., "The captain is always supposed to hear stories.").
	4	MINIMALLY ACCEPTABLE
25.3	3	Offers only a broad generalization without reference to the story. Answers may be unsupported by details in the story (e.g., "He was nicer;" "He was a better person;" "He might know who did it.").
2.6	2	Answer is consistent with details in the story, but inappropriate, typically not taking into account "something you hadn't done" (e.g., "Jim Parker because you could get away with more.").
5.7	1	Wildly inaccurate (e.g., "He was the person being accused.") or irrelevant ("Mike did it.").
0.6	0	No response.

Mean scale point = 4.00 Interrater reliability = .95

Figure 5.2 Rating Scale and Response Distribution for Grade 4: Makes Inferences about Characters in a Narrative Passage

Q. LIST TWO THINGS IN THIS PICTURE THAT TELL YOU THAT THERE ARE TREES NEARBY.

Basis of the scale: identification of pictoral detail; relevance.

%	Rating	Description
70.5	5	Both responses cite relevant evidence from the picture.
	5	DESIRABLE
22.9	4	Attempts to address the question. One response is relevant, consistent with the picture and specifies wood, or trees.
	4	MINIMALLY ACCEPTABLE
3.9	3	Names objects/detail made of wood but doesn't mention wood or trees.
1.8	2	At least one response attempts to address the question, but all evidence cited relies on generalization beyond the picture ("It's in the forest."), or serious misinterpretation of detail, or is irrelevent, ("They don't have electricity.").
1.0	1	Does not address the question; neither response deals with wood, trees, etc.
0.0	0	No response.

Mean scale point = 4.60

Figure 5.3 Rating Scale and Response Distribution for Grade 4: Selects Relevant Detail from a Picture

Q. LIST THREE WAYS THAT THE PLACE WHERE YOU LIVE IS DIFFERENT FROM THE HOUSE IN THE PICTURE.

Basis of the scale: identification of differences.

%	Rating	Description
4.2	6	Clearly identifies three differences, making explicit comparisons in all cases (e.g., "We have a stove, not a fireplace.").
79.8	5	Clearly identifies three differences. Comparison may be implicit but is readily inferred.

------------5--------------------DESIRABLE--------------------------------------

8.6	4	Clearly identifies two differences. Comparison may be implicit but is readily inferred.

------------4----------------MINIMALLY ACCEPTABLE------------------------------

2.3	3	Clearly identifies one difference. Comparison may be implicit (e.g., "They have candles.") but is readily inferred.
4.1	2	Appears to address the question but either: (a) seriously misinterprets picture; (b) makes unwarranted assumptions; or (c) (most commonly) fails to make a comparison (e.g., names object without explanation--"table," "dishes" --leaving the reader to infer "our...is different than their..."). It is not clear from the answers whether or not the student is able to make logical interpretations about the picture.
0.0	1	Does not appear to understand task. Irrelevant.
0.7	0	No response.

Mean scale point = 4.74

Figure 5.4 Rating Scale and Response Distribution for Grade 4: Recognizes Differences Based on a Picture

5.5 Comparison Items: Grade 4 and Grade 7

Two passages appeared on both Form 4Q and Form 7Q: an informative passage and a poem.

5.5.1 Informative Passage

Both grades 4 and 7 students read an informative passage about Arctic Foxes, and responded to three items shown in Figures 5.5 through 5.7.

The first item, shown in Figure 5.5, required students to locate explicit relevant information about how foxes keep warm when they are resting. Students at both grade levels performed extremely well on this item. At grade 4, over 93% of the responses were at least "minimally acceptable," while over 85% exceeded the "desirable" standard; at grade 7, over 97% were at least "minimally acceptable," with over 93% "desirable."

The second question, shown in Figure 5.6, asked students to predict ways in which Arctic foxes might change, given a warmer climate. For this item, markers and Interpretation Panelists estalished different "minimally acceptable" and "desirable" levels for grade 4 than for grade 7. Given these standards, over 80% of students at each grade level provided at least "minimally acceptable" responses. At grade 7, over 59% exceeded the "desirable" level; at grade 4, close to 65%. Responses were also examined to determine the proportion of students who used information not provided in the passage in framing their responses. At grade 4, 11% of students used previous knowledge to predict at least one change; at grade 7, 21% did so.

The third item, shown in Figure 5.7, provided students with a chart outline for comparing winter colour, summer colour, ears, and body shape of Arctic and red foxes. "Minimally acceptable" and "desirable" standards varied across grade levels. At grade 4, 77.5% of responses were judged to be at least "minimally acceptable," compared with 83.8% at grade 7; 65.2% of grade 4 responses exceeded "desirable" for that grade level compared with 28.1% of grade 7 responses which met the more stringent "desirable" standard for grade 7.

Overall, both grade 4 and 7 student performance on the items associated with this passage was encouraging. Most responses indicated a clear understanding of explicit material, skill in making generalizations, and ability to organize material under headings given. These are key skills for dealing effectively with content area material.

5.5.2 Poetry

Both grades 4 and 7 students were presented with a poem, "The Mouse," (see Figure 3.1, Chapter 3) and asked to make and substantiate a personal evaluation. Grade 7 students were asked to interpret two lines of the poem as well.

The rating scale and response distributions for the personal evaluation are shown in Figure 5.8; 39% of grade 4 responses and 67% of grade 7 responses were judged to be at least "minimally acceptable." Only 2% of grade 4 responses and 23% of grade 7 responses were judged "desirable." Students had no difficulty arriving at a judgement: 90% of grade 4 students reported that they liked the poem; 10%, that they did not. At grade 7, 82% liked the poem, while 17% did not, and 1% could not decide. Most grade 4 students offered only sweeping generalizations in support of their responses to the poem, failing to make any specific reference to the text; a relatively high proportion of grade 7 responses displayed similar characteristics. Results offer cause for concern at both grades 4 and 7. The "minimally acceptable" level is not particularly demanding--as shown in Figure 5.8, any paper which offered at least one reason or criteria clearly related to the poem exceeded the "minimally acceptable" level. Teachers who marked this item expressed disappointment with the results. Many more students, they felt, should be able to provide at least one specific reason to support their personal evaluations of material. Markers also noted that most students apparently have had little experience in dealing with similar tasks.

At grade 4, there was no significant association between opinion of the poem and assigned rating. At grade 7, however, students who reported that they liked the poem provided responses which obtained significantly higher ratings.

Responses which received ratings of "3" or above (see Figure 5.8) were classified according to content. As shown in Table 5.2, grade 7 students were more likely to substantiate their evaluations of the poem through a discussion of theme or interpretation than were grade 4 students. On the other hand, grade 4 students were more likely to refer to matters of form, such as rhyme or rhythm. Associations among opinions and reasons were also examined. Grade 7 students who liked the poem were more likely to discuss theme or interpretation, while those who disliked the poem were more likely to discuss development/events portrayed. At grade 4, however, those who disliked the poem were most likely to cite matters of form.

Grade 7 students were also asked to interpret two lines of the poem. As shown in Figure 5.9, more than 82% were able to provide at least a "minimally acceptable" response; more than 72% exceeded "desirable."

Table 5.2
Distribution of Reasons Given for
Personal Evaluation of a Poem: Grades 4 and 7

Classification	Percent of Students	
	Grade 4	Grade 7
Theme/Interpretation	26.1	44.1
Development (beyond statement of topic)	23.1	27.2
Language/imagery	22.2	24.5
Form	21.8	9.6
Topic	6.9	8.5

Q. WHAT IS ONE WAY ARCTIC FOXES KEEP WARM WHEN THEY ARE RESTING?

Basis of the scale: Accuracy

Percent			
Gr.4	Gr.7	Rating	Description
85.6	93.1	4	Uses information from the passage or prior knowledge to provide an acceptable answer (e.g., "dig a hole in the snow" or "curl up with their tails wrapped around them").
----------	----------	-----4-----	----------DESIRABLE----------
7.5	4.3	3	Deals with keeping warm but no apparent connection to "when they are resting" (e.g., "small ears conserve heat;" "long hair between their paws") or incomplete reference from passage ("cover nose with tail").
----------	----------	-----3-----	------MINIMALLY ACCEPTABLE------
5.3	2.2	2	Attempts to deal with keeping warm but answer is incomplete (e.g., names part of body--"their tails").
0.3	0.4	1	Does not deal with keeping warm OR totally misinterprets information given.
1.3	0.0	0	No response.

Mean scale point: grade 4 = 3.76
grade 7 = 3.90

Interrater reliability:
grade 4 = 1.00
grade 7 = .98

Figure 5.5 Rating Scale and Response Distributions for Grades 4 and 7: Locates Relevant Detail in an Informative Passage

Q. THINK ABOUT WAYS ARCTIC FOXES MIGHT CHANGE IF THEY MOVED TO A WARMER CLIMATE. LIST THREE WAYS BELOW.

Basis of the scale: Is prediction consistent with information given? Is it logical?

Percent			
Gr.4	Gr.7	Rating	Description
32.2	59.5	6	Three defensible changes specified. (Explicit).
----------------------6------DESIRABLE FOR GRADE 7 ONLY----------------------			
32.7	21.7	5	Two defensible changes specified. (Explicit).
----------------------5------MINIMALLY ACCEPTABLE (7)-----DESIRABLE (4)-------			
22.3	10.1	4	One defensible change specified. (Explicit).
----------------------4------MINIMALLY ACCEPTABLE FOR GRADE 4 ONLY-----------			
5.0	5.2	3	No direct prediction in terms of a comparative adjective or adverb, but at least one description is offered which implies a logical change (e.g., "brown-gray all year").
2.8	0.7	2	At least one change is specified but there are no logical predictions (e.g., "change colour every day;" "wouldn't have to preserve food for the winter").
2.7	1.2	1	Irrelevant. Does not make a prediction or specify a change (e.g., "they could run").
2.3	1.7	0	No response.

Mean scale point: grade 4 = 4.69
grade 7 = 5.24

Interrater reliability = .88

Figure 5.6 Rating Scale and Response Distributions for Grades 4 and 7: Makes Generalizations from Informative Material

Q. FILL IN CHART BELOW.

Basis: Accurate, relevant, complete. Where information is accurate and relevant, but incomplete, move down one scale point.

Percent			
Gr.4	Gr.7	Rating	Description
12.9	28.1	6	Six boxes completed with accurate, relevant information.
		6	DESIRABLE FOR GRADE 7 ONLY
52.3	55.7	5	Five boxes completed with accurate, relevant information.
		5	MINIMALLY ACCEPTABLE (7)-----DESIRABLE (4)
12.3	10.9	4	Four boxes completed with accurate, relevant information.
		4	MINIMALLY ACCEPTABLE FOR GRADE 4 ONLY
7.7	2.4	3	Three boxes completed with accurate, relevant information.
7.1	0.7	2	Two boxes completed with accurate, relevant information.
4.2	1.4	1	One box completed with accurate, relevant information.
3.5	0.8	0	No response.

Mean scale point: grade 4 = 4.30
grade 7 = 5.01

Figure 5.7 Rating Scale and Response Distributions for Grades 4 and 7: Locates/organizes Information from Informative Material

Q. DID YOU LIKE READING THIS POEM? TELL WHY ON THE LINES BELOW. BE SURE TO GIVE GOOD REASONS FOR YOUR CHOICE.

Basis of the scale: expression and substantiation of opinion; relationship to poem.

Percent		Rating	Description
Gr.4	Gr.7		
0.3	7.3	6	As (5) but extends discussion to (a) give additional reasons/criteria, or (b) develops and elaborates reasons(s) to display relatively high level of sophistication (e.g., "It is told from the mouse's point of view, so I could put myself in the mouse's position and get a sense of what starving animals feel like. It gave me something to think about.").
1.7	15.3	5	Gives one reason or criteria which is related to the text and goes beyond a simple re-statement of topic (e.g., "It gave me a sense of what starving animals feel like;" "It has some nice rhyming in the middle;" "The way the author described the moonlight.").
		5	DESIRABLE
9.2	14.0	4	Gives two or more vague or unelaborated criteria. (Essentially longer (3)'s.)
27.8	30.0	3	Gives one reason or criterion which demonstrates some relationship with the poem, but is vague or relies on re-telling of the story (e.g., "I like mice;" "It's talking about a mouse searching for food at night;" "It tells you the truth").
		3	MINIMALLY ACCEPTABLE
53.2	30.1	2	Broad sweeping generalization or opinion offered without support. No specific reference to text--could apply to almost any story or poem (e.g., "It was...good, interesting, boring..."). Typically use broad, general adjectives.
7.2	1.6	1	Irrelevant or incomprehensible. Does not address the question.
0.7	1.4	0	No response.

Mean scale point: grade 4 = 2.44
grade 7 = 3.28

Interrater reliability:
grade 4 = .84
grade 7 = .90

Figure 5.8 Rating Scale and Response Distributions for Grades 4 and 7: Personal Evaluation of a Poem

Q. "Little I ask
And that little is not granted."

IN YOUR OWN WORDS EXPLAIN WHAT THESE LINES MEAN.

Basis of the scale: recognizes (a) modesty of the mouses's request; (b) his frustrations; and (c) the unfairness implied. Interpretation is made within the context of the poem.

%	Rating	Description
20.4	5	Interpretation relevant, logical and complete. Notes the emphasis on "All I ask...little" and the implied unfairness (e.g., "He doesn't ask much, and still he doesn't get what he asked for;" "All he wants is a little food and is that too much to ask?" "He only asks a little from this world and it isn't granted to him.").
51.7	4	Interpretation is relevant, logical, addresses the mouse's request and the outcome, and notes the modesty of the mouse's needs. Does not deal with the implied unfairness (e.g., "He asks for a little food but doesn't get it.").

-------------4----------------DESIRABLE--------------------------------

10.6	3	Interpretation is relevant, logical and addresses both desire and outcome, but does not deal with the modesty of the mouse's request (e.g., "He asks for food but doesn't get any.").

-------------3-------------MINIMALLY ACCEPTABLE---------------------------

7.1	2	Interpretation is relevant and logical, but addresses only part of the quotation (e.g., "He is asking for food").
9.2	1	Apparent serious misinterpretation of lines/poem. May be irrelevant or inaccurate.
1.2	0	No response.

Mean scale point = 3.64 Interrater reliability = .90

Figure 5.9 Rating Scale and Response Distribution for Grade 7: Interprets Poetic Language

5.6 Open-ended Responses: Grade 7

In addition to questions associated with the informative passage and the poem described in the previous section, grade 7 students were required to provide open-ended responses to six items variously associated with a personal essay and two narrative passages. One of the narrative passages also appeared on Form Q; it is discussed in section 5.7.

5.6.1 Personal Essay

Form 7Q included a personal essay which outlined serious concerns about the competitive aspects of children's sports, citing a number of "experts" in support. As shown in Figure 5.10, students were asked, first, to decide if the article presented a fair and accurate picture of children's sports, and then, to substantiate their responses. Seventy-five percent of students indicated that the article was fair and accurate; 23%, that it was not; 1% could not decide; and 1% omitted the first part of the item. The rating scale and response distribution for students' explanation or substantiation of their decision about the article's fairness and accuracy are shown in Figure 5.10. Over 77% of responses were judged to be "minimally acceptable;" that is, at least one relevant reason or piece of evidence was presented. Over 55% of responses exceeded the "desirable" standard, providing at least some elaboration for the reason/evidence presented. Responses which fell below "minimally acceptable" tended to misinterpret the essay, to make only a vague generalization, or to offer circular reasoning. There was no association between the two parts of this item--that is, scores of students who indicated that the article was fair and accurate were not significantly different from those of students who indicated that was not.

Responses rated at scale point 3 or above were analyzed to determine the nature of the substantiation offered. Results are shown in Table 5.3.

Table 5.3
Distribution: Nature of Substantiation
for Evaluation of Personal Essay: Grade 7

Classification	Percent of Responses
Coaches'/parents' behaviours	28.0
Psychological effects	24.2
Purpose: winning vs. fun	16.4
Physical effects	13.2
Author's purpose/bias	10.7
Participation: drop-outs	5.6
Academic effects	1.1
Fitness/skill development	0.8

Students most often responded by offering examples or opinions about the behaviour of coaches and parents or by discussing the psychological effects of "playing to win." The least frequent responses discussed the relative importance of sports and school achievement, or dealt with the development of fitness/skills.

The classifications presented in Table 5.3 were examined in terms of the ratings given; results indicated that students who responded in terms of physical effects, of relative importance of sports/school, or of coaches'/parents' behaviour, tended to receive somewhat lower ratings than those who focused on other categories.

5.6.2 Narrative passage: Grade 7

Form Q included three open-ended items associated with an excerpt from Morley Callaghan's short story, "Luke Baldwin's Vow". The first item, shown in Figure 5.11, asked students to infer motivation of one of the main characters: what was the real reason that Mr. Kemp offered to pay Luke to get the cows? Over 80% of students provided a "minimally acceptable" answer; 38% of responses exceeded the "desirable" standard. Close to 9% of students accepted the character's literal explanation of his actions, thereby indicating a faulty understanding of the story. A further 6.3% offered responses which had no basis in the text presented. Results of this item are comparable with those for item T39 of the multiple-choice achievement surveys, where 75% of students indicated that Mr. Kemp's offer was designed to help Luke keep his dog.

The second item associated with this passage asked students to predict the outcome of the story, and to substantiate their answers. Most students (90%) predicted that Luke would be allowed to keep his dog. Figure 5.12 displays the rating scale and response distributions for students' explanation of their choices. Slightly more than 67% of responses were judged "minimally acceptable;" these provided evidence which was consistent with the text and related to events in the story. Over 30% of responses exceeded the "desirable" level; these dealt specifically with the nature of the solution proposed and its effect on Luke's uncle.

Overall, responses to this item were not particularly encouraging: nearly 15% of responses reflected misinterpretation or circular reasoning; a further 16.4% offered only vague reasons or an interpretation well outside information presented. Such responses reflect either a disturbing lack of sophistication in terms of narrative structures, or--perhaps more likely--a lack of experience in providing support for opinions. It is interesting to note that students who indicated that Luke would be able to keep his dog tended to provide stronger substantiation for their answers than did those who thought he would lose the dog.

The third item asked students if they would enjoy reading the rest of the story. Again, they were required to substantiate their answers. Seventy-eight percent of students indicated that they would like to read the story; 22%, that they would not. As shown in Figure 5.13, 79.4% provided at least "minimally acceptable" reasons for their opinions, while 50.1% of responses were judged "desirable." Overall, students who wished to read the story tended to provide stronger substantiation. Again, most of the unacceptable responses were characterized by sweeping generalizations or by circular reasoning.

Papers which were judged to reach at least the "minimally accaptable" standard were analyzed to determine the nature of the reasons students provided. Most students (44%) indicated that they would like to read the rest of the story to find out if their predictions about the outcome were correct. A further 34% of students discussed the story in terms of its development; 11% noted that they liked or disliked stories about dogs. Results are shown in Table 5.4.

Table 5.4
Distribution: Reasons Provided
to Support Personal Evaluation of a Narrative Passage: Grade 7

Classification	Percent of Responses
To confirm prediction	47.4
Development/structure	34.2
Topic appeal	11.1
Theme/interpretation	3.8
Character	2.8
Personal identification	0.7

Student responses were also analyzed to examine associations between desire to read the story and the reason provided. Students who indicated a desire to read the rest of the story most often wished to confirm their predictions about the outcome. Those who didn't want to read the story most often answered in terms of the development of the story, frequently noting the predictability of the outcome or the lack of "action." For these students, the second most frequent category of responses dealt with the nature of the topic, with students noting that they didn't like animal stories.

The association between the response categories shown in Table 5.4, and the ratings shown in Figure 5.13 were also examined. Results of this analysis indicated that students who based their responses on theme/interpretation were most likely to receive high ratings, while those who responded in terms of structure/development of the story were most likely to receive low ratings.

Overall, most grade 7 students who responded to the questions about "Luke Baldwin's Vow" demonstrated a relatively sound understanding of the excerpt provided. It should be noted, however, that many students failed to make appropriate inferences about the story and failed to provide satisfactory substantiation for their answers, even though they were specifically directed to do so.

Q. THIS ARTICLE IS ABOUT THE DANGERS OF CHILDREN'S SPORTS. DO YOU THINK THE AUTHOR PRESENTS A FAIR AND ACCURATE PICTURE OF CHILDREN'S SPORTS? EXPLAIN WHY ON THE LINES BELOW. YOU MAY USE EXAMPLES FROM YOUR OWN OR YOUR FRIENDS' EXPERIENCES TO SUPPORT YOUR ANSWER IF YOU WISH.

Basis of the Scale: extent and logic of substantiation; relationship to text; deals with the issues of fairness and accuracy.

%	Rating	Description
12.3	5	Clearly addresses the issues of fairness and accuracy. Focuses on author's purpose and offers evidence to support or counter the author's observations (e.g., "It is not fair because he doesn't mention any of the good things, he just talks about all the bad things. Some coaches and parents may be like that but he makes them all sound bad. He is wrong about the damage, too. I've played lots of sports. I do have fun and I've never been hurt.").
42.9	4	Provides at least one piece of relevant, elaborated evidence where a broad statement of agreement/disagreement is elaborated through example, reference to text, etc. (e.g., "I have seen these things happen. I know lots of people who quit playing soccer because they were playing for fun but coaches and parents were all involved in winning. They forgot why the kids signed up.").

------------4--------------------DESIRABLE-------------------------------------

%	Rating	Description
22.5	3	Provides at least one piece of relevant evidence but doesn't elaborate it (e.g., "He only tells the bad things"; "I know many kids who don't play because they're not good.").

------------3--------------MINIMALLY ACCEPTABLE------------------------------

%	Rating	Description
10.9	2	Provides circular reasoning, serious misinterpretations of text or vague generalities as evidence (e.g., "Yes, it's true;" "That's the way it is;" "You should wear proper equipment;" "It is fair and accurate.").
6.0	1	Irrelevant. Does not appear to address the question.
5.2	0	No response.

Mean scale point = 3.28

Figure 5.10 Rating Scale and Response Distribution for Grade 7: Substantiates Personal Evaluation of a Poem

Q. WHAT WAS THE REAL REASON THAT MR. KEMP OFFERED TO PAY LUKE 75 CENTS EACH WEEK TO GET THE COWS?

Basis of the scale: infers motivation of character.

%	Rating	Description
38.0	5	Clearly recognizes the solution Mr. Kemp is offering (e.g. "So he could pay his uncle for keeping the dog.").

-----------5-------------------DESIRABLE-----------------------------------

42.6	4	Recognizes that Mr. Kemp is offering a solution to Luke's problem, but response is vague (e.g. "To help Luke.") or somewhat over-interpreted.

------------4---------------MINIMALLY ACCEPTABLE----------------------------

8.9	3	Re-states literal information given; accepts Mr. Kemp's explicit reason (e.g., "He likes the way Luke gets the cows." "So he wouldn't have to do it.").
6.3	2	Makes an inference that has no basis in the material presented (e.g., "To buy a new dog." "To get his mind off the dog.") or is extremely broad, (e.g., "He was a kind man.").
2.5	1	Does not address the question of Mr. Kemp's motivation.
1.8	0	No response.

Mean scale point = 4.02

Figure 5.11 Rating Scale and Response Distribution for Grade 7: Infers Motivation of Character in a Narrative Passage

Q. DO YOU THINK LUKE WILL BE ABLE TO KEEP HIS DOG? EXPLAIN WHY ON THE LINES BELOW. REMEMBER TO GIVE GOOD REASONS FOR YOUR CHOICE.

Basis of the scale: substantiation of opinion; consistency of evidence with text.

%	Rating	Description
31.8	4	Evidence is consistent with text and takes into account the nature and effect of the proposition (e.g., "His uncle will think, 'if he's willing to work for Dan, I can't get rid of him'." "Luke's uncle was a practical man and Mr. Kemp's proposition was on his level.").

------------4--------------------DESIRABLE-----------------------------------

35.9	3	Evidence is consistent with the text and depends upon events in the story, but may rely on a literal interpretation (e.g., "75 cents should be enough to feed the dog;" "Because Luke is making money with his dog.").

------------3---------------MINIMALLY ACCEPTABLE------------------------------

16.4	2	Evidence is vague, or involve interpretation well outside the information presented (e.g., "If Luke loves the dog he would find a way to keep him." "Luke is responsible.").
14.5	1	Evidence presented is either (a) irrelevant, (b) in conflict with the text, or (c) dependent upon circular reasoning alone (e.g., "His uncle looks like an easy going man." "Yes, because I believe he will get to keep him." "Mr. Kemp is too old to get the cows.").
1.6	0	No response.

Mean scale point = 2.82

Figure 5.12 Rating Scale and Response Distribution for Grade 7: Evaluates Information Presented in a Personal Essay

Q. WOULD YOU ENJOY READING THE REST OF THE STORY ABOUT DAN? EXPLAIN WHY ON THE LINES BELOW. REMEMBER TO GIVE GOOD REASONS FOR YOUR CHOICE.

Basis of the scale: substantiation of opinion; specification of criteria.

%	Rating	Description
6.7	5	As "4" below, but extends discussion to include more than one reason or to develop and elaborate a single reason at a relatively high level of sophistication.
43.4	4	Gives at least one reason which is clearly related to this story (e.g., "My dog died so I feel close to the person in this story." "Told me how some people handle problems." "To find out if I'm right about what will happen to him." "To find out what makes Dan a great dog.").

------------4--------------------DESIRABLE------------------------------------

29.3	3	Gives reasons or criteria which are related to the story, but somewhat general or vague (e.g., "I like stories about animals." "I like to finish what I start." "It was touching.").

------------3---------------MINIMALLY ACCEPTABLE------------------------------

19.1	2	Gives broad generalization or circular reasoning as support (e.g., "It was well written." "It was boring." I enjoyed it so far.").
0.9	1	Irrelevant. Does not address the question. Typically re-tell story or main ideas (e.g., "Luke's uncle wants to get rid of the dog.").
0.7	0	No response.

Mean scale point = 3.34

Figure 5.13 Rating Scale and Response Distribution for Grade 7: Predicts Outcome in a Narrative Passage

5.7 Comparison Items: Grade 7 and Grade 10

Both Form 7Q and Form 10Q included a short story about a teenage runaway who was writing a letter to his mother. Two questions focused on character and appeared at both grade levels. As well, grade 10 students were asked to provide their personal evaluations of the story. These items, along with associated rating scales and response distributions, appear in Figures 5.14 through 5.16.

5.7.1 Narrative Passage

The first item shown in Figure 5.14, asked, "How do you think the author intends you to feel about David?" Close to 65% of grade 7 and 75% of grade 10 students provided "minimally acceptable" responses. These results are consistent with those for multiple-choice items S38 at grade 7 and T39 at grade 10, where 68% and 81%, respectively, chose the keyed response "sympathetic." The multiple-choice item was expected to be somewhat easier than the open-ended form, because it offered only attitudes as options. Markers noted that many grade 7 students misinterpreted the question, frequently offering a description of David rather than a response to or attitude toward him. The results for grade 7 are neither surprising nor particularly disturbing. At this level, most students have apparently not previously encountered questions of this type. It had been anticipated, however, that grade 10 students would perform well; consequently, grade 10 results are somewhat disappointing.

Figure 5.15 displays the next item based on this story. Students were asked, first, to identify salient characteristics of the main character, and then, to substantiate these through references to the story. At grade 7, over 74% of responses were at least "minimally acceptable." This is a pleasing result; previous research (see, for example, Conry & Rodgers, 1978; Jeroski, 1982) suggests that portrayal of character is a difficult task for young adolescents. Results for grade 10, however, are cause for concern: using the same standard as that applied to grade 7, approximately 77% of responses exceeded "minimally acceptable." These results suggest an extremely weak pattern of growth during the junior secondary grades. This is particularly distressing, given the emphasis which the B.C. Secondary English Scope and Sequence chart places on characterization in grade 9 and, to some extent, in grade 8. Markers noted that students' ability to express themselves in writing strongly influenced their responses to this item: those students with limited vocabularies, for example, were at a severe disadvantage in trying to portray the character. Markers also noted the apparent effects of instruction; many students, particularly at grade 10, have clearly received instruction in developing character sketches. These students tended to provide superior responses in a recognizable format, with terse, focused, and complete answers. Effects of instruction were perhaps more apparent for this item than for any other on the Q-forms. Finally, many students identified strongly with the character. Some of these had difficulty presenting an objective answer; rather, they lapsed into personal anecdote.

Results presented in Figures 5.14 and 5.15 suggest that while many grade 10 students have developed strong competencies in dealing with characterization, a relatively large proportion have not. The 25% of students who were unable to provide acceptable responses for each of these items appear to be unprepared for the requirements of most senior secondary English courses, where the study of literature is intensified and a basic understanding of elements such as character is assumed.

Grade 10 students were also asked to provide a personal evaluation of the story. The item, rating scale, and response distribution are given in Figure 5.16. Most students responded favourably to the story: 76% reported that they liked it; 19% that they did not; 4% could not decide; and 1% did not answer. As shown in Figure 5.16, over 76% of students provided at least "minimally acceptable" substantiation for their opinions; approximately 43% of responses exceeded the "desirable" standard. Markers felt that, overall, students had done relatively well, and noted that most students were able to relate to the problems which the story dealt with. Again, however, a disturbing proportion of students offered only sweeping generalizations to support their answers.

Responses which reached the "minimally acceptable" level were classified as to content, and the association between response to the story and nature of the substantiation offered was examined. Results of this analysis are shown in Table 5.5.

Table 5.5
Distribution: Content Classifications for Personal Evaluation of a Narrative: Grade 10

Classification	Percent of Students		
	Liked Story	Disliked Story	Combined
Theme/interpretation	37.2	20.6	34.9
Character	33.5	11.8	30.6
Structure/development	11.9	35.3	15.1
Topic/content	11.0	23.5	12.7
Mood/imagery	5.0	5.9	5.2
Form/technique	1.4	2.9	1.6

Students who liked the story were most likely to focus their responses on theme or character. Those who disliked the story, however, were more likely to discuss the development of the story noting, for example, the lack of "action" or the subject matter--a teenage runaway--as being unappealing. It is interesting to note that students who liked the story, overall, tended to provide stronger responses not only to this item, but also to the items about character which were discussed earlier. Student predisposition toward material clearly affects the level of competence they display in dealing with it.

Q. HOW DO YOU THINK THE AUTHOR INTENDS YOU TO FEEL ABOUT DAVID?

Basis of the scale: Recognition that nature of portrayal is deliberate; consistent with text. NOTE THAT THIS QUESTION DOES NOT REQUIRE STUDENTS TO SUBSTANTIATE THEIR ANSWERS.

Percent			
Gr.7	Gr.10	Rating	Description
59.7	62.8	4	Answers directly in terms of reader's affective response. Consistent with text. May be one word (e.g., "compassionate"). Need not demonstrate a high level of sophistication (e.g., "be on his side").

-----------------------4----------DESIRABLE-----------------------------------

Gr.7	Gr.10	Rating	Description
5.0	13.0	3	Answers in terms of reader's response, but may be expressed indirectly or in cognitive terms (e.g., He wants you to think that...) rather than as an attitude or emotion. May attempt to answer in terms of theme.

----------------------3----MINIMALLY ACCEPTABLE------------------------------

Gr.7	Gr.10	Rating	Description
26.2	16.2	2	Attempts to address the question but either: (a) response is clearly not consistent with text (e.g., "to despise him"); or (b) fails to directly indicate an attitude or response.
5.2	4.8	1	Does not address the question. No apparent recognition of intent on the part of the author or effect on the reader.
3.5	3.2	0	No response.

Mean scale point: grade 7 = 3.02
grade 10 = 3.27

Interrater reliability:
grade 7 = .98
grade 10 = .87

Figure 5.14 Rating Scale and Response Distributions for Grades 7 and 10: Infers Author's Attitude toward a Character in a Narrative Passage

Q. WHAT KIND OF A PERSON WAS DAVID? WHAT WAS IT ABOUT THE STORY THAT LED YOU TO DESCRIBE DAVID THE WAY YOU DID?

Basis of the scale: Identification of appropriate character trait; degree substantiation with reference to text. Note that question explicitly requires reference to text ("What was it about the story ...").

Percent			
Gr.7	Gr. 10	Rating	Description
4.4	6.2	5	Attempts to portray more than one dimension of character in a logical and coherent fashion. Evidence is clearly related to the story (e.g., "David is independent, mature and considerate. He shows his independence when ....You can tell he is mature because....He is considerate to his mother when he....").
17.5	26.5	4	One or more character traits are identified with two or more pieces of evidence clearly related to the story. Presentation is clear and logical, but tends to focus exclusively on one aspect of character.
--------------------4---------DESIRABLE--------------------------------------			
52.4	43.9	3	One or more character traits are identified and one or two reasons or pieces of relevant evidence are given. Relationship to text may require some inference on the part of the rater.
--------------------3------MINIMALLY ACCEPTABLE----------------------------			
22.4	21.9	2	Character trait(s) identified without substantiation from text. May omit evidence entirely, or offer circular evidence, vague reasons, or misinterpretation of the text.
3.3	1.7	1	Does not identify character trait.
0.0	0.0	0	No response.

Mean scale point: grade 7 = 2.97
grade 10= 3.14

Interrater reliability = .86

Figure 5.15 Rating Scale and Response Distributions for Grades 7 and 10: Makes Inferences about Character in a Narrative Passage.

Q. DID YOU LIKE THIS STORY? EXPLAIN WHY OR WHY NOT ON THE LINES BELOW.

Basis of the scale: expression and substantiation of opinion; specification of criteria

%	Rating	Description
5.0	5	As #4 but either (a) gives 2 or more reasons, or (b) develops and elaborates at least one criterion, displaying a relatively high degree of sophistication. ("It was unlike other runaway stories. There was no sense of doom or urgency. It was about someone who ran away for a reason, instead of because he hated his parents. At the same time, it was like an old experience--David reminded me of myself.")
37.7	4	Gives two or more unelaborated reasons/criteria. (Essentially longer (3)'s.) OR Gives one reason or criterion which is clearly related to the text and relies on evidence/support beyond retelling. ("It's about an issue close to my own life--the pressures of growing up;" "It was too short--there was no chance to gain background or appreciation of the character or situation.")

----------------4----------------DESIRABLE------------------------------

%	Rating	Description
33.7	3	Gives one reason which demonstrates awareness of the text, but is vague or depends upon re-telling of the story. ("It's about a kid who can't cut it in life;" "You know how David feels.")

----------------3-----------MINIMALLY ACCEPTABLE---------------------------

%	Rating	Description
15.9	2	Vague or unelaborated reason or criteria. Broad, sweeping generalization or opinion offered without support. Could apply to almost any story/poem--no specific reference to text (e.g., "not interesting," "well written," "boring," "interesting," "no excitement").
6.3	1	Fails to address the question.
1.2	0	No response.

Mean scale point = 2.76 Interrater reliability = .91

Figure 5.16 Rating Scale and Response Distribution for Grade 10: Personal Evaluation of a Narrative Passage

5.8 Open-ended Responses: Grade 10

In addition to the short story described in the previous section, the grade 10 Form Q included an informative passage, a poem, and a personal essay.

5.8.1 Informative Passage: Grade 10

Figure 5.17 displays the rating scale and response distribution for the item associated with a passage about the measurement of earthquakes. Students were provided with a chart outline designed to compare the Mercalli and Richter scales in terms of five specified characteristics. Most grade 10 students had little difficulty with this task: 85.7% of responses were at least "minimally acceptable," correctly completing at least seven of the ten chart entries. As well, 56.7% of responses exceeded the "desirable" level--that is, there was no more than one error or omission--and 28.6% of students made no errors or omissions. One of the most frequent errors involved the upper limit of the Mercalli Scale, given in the passage as XII, which students often incorrectly interpreted as 7 or 22. Secondary teachers in content areas where Roman numerals are used may need to review their interpretation.

5.8.2 Poetry: Grade 10

Form 10Q included two open-ended items associated with Raymond Souster's poem, "Flight of the Roller Coaster." The first of these asked students to infer the narrator's reaction to the flight. As shown in Figure 5.18, only 58.2% of students were able to provide at least a "minimally acceptable" response to this item. It is particularly disturbing to note that nearly one-quarter of responses were judged to be "clearly at variance with the text." Markers noted that most students apparently had had no previous experience with questions of this type, and that many students did not even attempt the item. Most students who responded did, they felt, understand the poem, but were unable to discuss it in a sophisticated manner. Again, such results do not bode well for student progress through senior secondary English courses.

Students were also asked to provide a personal evaluation of the poem: 59% indicated that they liked it; 33%, that they did not; 3% were ambivalent; and 5% did not answer. Figure 5.19 displays the rating scale and response distribution for this item. (The rating used here is comparable to that shown in Figure 5.16 for personal evaluation of a short story.) Student performance on this item was relatively weak: approximately 58% of responses were judged to meet the "minimally acceptable" standard; only 24% were judged "desirable." Results compared unfavourably with those shown earlier for the short story (see Figure 5.16).

Markers noted a number of pervasive weaknesses, including:

- Many students adopted an "I don't like poetry" stance, and made no attempt to provide a considered response to the item;

- Few poetry terms were used and many of those which were cited were used incorrectly;

- Many students objected to the poem because it did not rhyme, indicating an extremely low level of sophistication for this grade level; and,

- Again, an alarming proportion of responses were characterized by vagueness or sweeping generalizations.

On a more positive note, many of the responses given a rating of "5" were excellent, offering well-considered arguments which indicated a fine sense of appreciation for poetry. The marking team hypothesized that results for this item reflected the current state of instruction: in many junior secondary classrooms teachers are systematically developing skills in the appreciation of poetry and establishing a strong basis for the development of skills in literary criticism; unfortunately, in other classrooms the genre of poetry is given only cursory treatment or dealt with as content to be learned. Results presented here lend some credence to the marker's view.

Students who reported that they liked the poem tended to offer significantly stronger responses to the two items shown in Figures 5.18 and 5.19. When the content of responses judged to be at least minimally acceptable was examined, further differences according to opinion of the poem were apparent. Table 5.6 presents results of this content analysis.

Table 5.6
Summary: Content Classifications for Personal Evaluation of the Poem: Grade 10

Classification	Percent of Students		
	Liked Poem	Disliked Poem	Combined
Responds to...			
Language/imagery	33.1	21.1	30.6
Fantasy	23.0	26.3	23.7
Subject (Roller Coaster)	14.9	7.9	13.4
Content	10.8	13.2	11.3
Structure/development	8.8	15.8	10.2
Theme/interpretation	8.8	10.5	9.1
Form/technique	0.7	5.3	1.6

Students who liked the poem were most likely to focus their discussion on the use of language/imagery; those who disliked the poem were more likely to react to the subject of fantasy. When the association between the classifications shown in Table 5.6 and ratings shown in Figure 5.19 was examined, analysis revealed that responses which described reactions to the subject matter--fantasy, or roller coasters--tended to assigned to lower scale points.

5.8.3 Personal Essay: Grade 10

Grade 10 students responded to a series of questions associated with an essay by Paul St. Pierre about the fate of wild horse bands in B.C. First, students were asked to list arguments presented by the author for and against the preservation of these bands. As shown in Figure 5.20, approximately 67% of students provided "minimally acceptable" responses; 33% were deemed "desirable." Unacceptable responses to this item were characterized by omissions of key arguments which the author had presented and by the inclusion of "invented" material unsupported by the text. Markers suggested that many students may have misread the question, although the item appears to be clear and explicit.

The second item asked students to indicate whether they thought the author favoured preserving the bands or eliminating them, or was equally sympathetic to both sides of the issue. Forty-four percent of students indicated that he was equally sympathetic to both sides; 33% felt he favoured preserving the bands; 15% felt he favoured eliminating them; and 8% did not answer. Next, students were asked to substantiate their perceptions of the author's point-of-view. Results are shown in Figure 5.21, which indicate that only 34% of responses reached a "minimally acceptable" level. Although markers noted that a number of factors including placement of the item (it was the last item on the survey) and wording of the question may have contributed to overall weak performance, they suggested that results indicated serious weaknesses in critical reading, and in comprehending instructions. Most students failed to include a single reference to the text in support of their answers. Many offered their own opinions without reference to the author's presentation. Others invented detail to support their views. In terms of structure, many responses consisted of single sweeping generalizations, while others engaged in circular logic without a focus.

While overall performance on this item was extremely weak, it should be noted that there were many outstanding responses among the 11% which received the highest rating (4).

Q. COMPLETE THE CHART USING INFORMATION FROM THE PASSAGE.

Basis of the scale: Accuracy; relevance to headings.

Score is a simple count of boxes which are filled with complete, relevant, accurate information (0 to 10). Assign no part marks, but if two or more boxes are "partially" correct, you may add a mark.

Percent	Rating
28.6	10
28.1	9

------------------------------9------------DESIRABLE--------------------

15.2	8
13.8	7

------------------------------7------------ACCEPTABLE------------------

6.0	6
3.1	5
0.6	4
1.3	3
0.3	2
1.0	1
1.7	0

Mean scale point = 8.16

Figure 5.17 Rating Scale and Response Distribution for Grade 10: Locates and Organizes Information in an Informative Passage

Q. **WHAT IS THE NARRATOR'S REACTION TO THE FLIGHT OF THE ROLLER COASTER?**

Basis of the scale: specifies a reaction(s) consistent with the details of the poem.

%	Rating	Description
1.9	5	Identifies and elaborates reaction. May discuss author's technique, identify more than one compatible reaction, or elaborate through explanation and reference to the poem. Relatively sophisticated. (e.g., "Takes it in stride as if it were expected. The poet emphasizes this by having 'the man' confide in the narrator, as if they had often discussed it, and by including a lot of ordinary detail like the witnesses who 'duly reported.'")
38.3	4	Explicitly identifies reaction which is consistent with details of the poem (e.g., "He treats it calmly, as if he expected it;" "takes it in stride;" "mesmerized;" "no panic or alarm.").

-----------4------------------DESIRABLE------------------------------------

%	Rating	Description
18.4	3	Implicitly deals with reaction which is consistent with the details of the poem. These responses are often introduced by "He thinks that..." or "It was like..." (e.g., "It was like a wild bird." "He thinks that it is alive and magical." "A movieland magic carpet.").

-----------3---------------MINIMALLY ACCEPTABLE-------------------------

%	Rating	Description
24.7	2	Specifies a reaction--either implicitly or explicitly--which is clearly at variance with the text (e.g., "Sarcastic;" "He hoped it ended quickly.").
7.7	1	Does not address the issue of "reaction" either explicitly or implicitly (e.g., "He tells what it's like on a roller coaster." "The roller coaster disappears behind a low flying cloud.").
8.8	0	No response.

Mean scale point = 2.77 Interrater reliability = .85

Figure 5.18 Rating Scale and Response Distribution for Grade 10: Infers Narrator's Reaction in a Poem

Q. DID YOU LIKE READING THIS POEM? WHAT WAS IT ABOUT THE POEM THAT LED YOU TO LIKE OR DISLIKE IT?

Basis of the scale: expression and substantiation of opinion; specification of criteria.

%	Rating	Description
7.1	5	As #4 but either (a) gives 2 or more reasons, or (b) develops and elaborates reason(s) to display relatively high level of sophistication--for example, may identify preferred/disliked aspect, and relate it to other works or explain technique used/abused.
16.8	4	Gives two or more unelaborated reasons/criteria (essentially longer (3)'s), or one reason, criterion, or generalization which is clearly related to the text and relies on evidence/support beyond a simple restatement of topic.

------------4------------------DESIRABLE------------------------------------

%	Rating	Description
33.9	3	Gives one reason or criterion which demonstrates some awareness of the text, but is vague or relies on restatement of topic. (e.g., "I like rollercoasters." "It's a neat fantasy." "It's not likely to happen.")

------------3---------------MINIMALLY ACCEPTABLE----------------------------

%	Rating	Description
34.2	2	Vague or unelaborated reason or criterion. Broad, sweeping generalization or opinion offered without support. Could apply to almost any poem/story--no specific reference to text. (e.g., "It was--exciting, interesting, boring, neat, and so on.) Typically uses broad, general adjectives or circular reasoning.
3.6	1	Does not address question. No statement of opinion/criterion.
4.6	0	No response.

Mean scale point = 2.76 Interrater reliability = .96

Figure 5.19 Rating Scale and Response Distribution for Grade 10: Personal Evaluation of a Poem

Q. IN THE SPACE PROVIDED BELOW, LIST ALL THE REASONS FOR AND AGAINST PRESERVING WILD HORSE HERDS THAT YOU CAN FIND IN THE ARTICLE.

Basis of the scale: identification of relevant arguments; appropriate assignment of "FOR" or "AGAINST"; objectivity. (Note that the question specifies "find in the article.)

Count each new piece of information, even where students have combined two arguments in one sentence.

%	Rating	Description
10.6	6	Identifies five or more relevant arguments and presents these accurately and objectively.
12.1	5	Identifies five or more relevant arguments but includes some instances of misinterpretation or addition of new arguments. Typically offer a complete, accurate and objective list for one side, but lapse into personal opinion or inappropriate citing on the other.
10.6	4	Identifies three or four relevant arguments; includes no irrelevant material.

------------4--------------------DESIRABLE------------------------------------

33.4	3	Identifies three or four relevant arguments but includes some material which is not supported by analysis of the text.

------------3--------------MINIMALLY ACCEPTABLE------------------------------

19.3	2	Identifies one or two relevant arguments from the text, but consists largely of material which is not supported by analysis of the text.
6.8	1	Response has little apparent connection to the text--introduces new arguments, ignores or misinterprets author's statements.
7.0	0	No response.

Mean scale point = 3.12

Figure 5.20 Rating Scale and Response Distribution for Grade 10: Locates and Organizes Arguments from a Personal Essay

Q. THE AUTHOR OF THIS PASSAGE EXPRESSES SYMPATHY WITH BOTH SIDES OF THE ARGUMENT ABOUT WILD HORSES. DO YOU FEEL HE IS MORE SYMPATHETIC TO ONE SIDE? EXPLAIN WHY YOU CHOSE YOUR ANSWER.

Basis of the Scale: degree of substantiation; consistency with text; objectivity. Support for any of the answers to question 13 is acceptable.

%	Rating	Description
11.0	4	Provides an elaborated argument to support choice. May offer two or more examples of one feature of the text or identify several different features which indicate the author's bias. For example, may provide several examples of word choice; may discuss both quantity and quality of the arguments presented; may refer to both explicit and implicit features. (e.g., "He says the issue is still open to debate, and he presents both sides fairly. He shows appreciation for the beauty of the wild horses and talks about his 'good fortune' in seeing them, but he does not criticize the ranchers. He has an objective tone, and concludes by saying he is open to argument.")

------------4--------------------DESIRABLE------------------------------------

%	Rating	Description
22.9	3	Provides at least one piece of evidence--clearly related to the text--which demonstrated author's point of view. May refer to quantity of argument, tone, selection of material, etc. (e.g., "He describes them in a majestic way." "He states clearly at the end that he hasn't made a decision.")

------------3-------------------MINIMALLY ACCEPTABLE------------------------

%	Rating	Description
39.0	2	Vague or unelaborated substantiation. May include some inaccuracies in interpretation or serious departures from the text. (e.g., "He sounds like he would rather save them.")
15.5	1	Does not address the question. May simply re-state answer to question 13 without elaboration, or offer personal conclusion without reference to the text. (e.g., "He is more sympathetic to preserving the horses." Or, "I think they should be saved.")
11.7	0	No response.

Mean scale point = 2.06 Interrater reliability = .90

Figure 5.21 Rating Scale and Response Distribution for Grade 10: Infers Author's Point-of-view in a Personal Essay

5.9 Associations among Open-ended Responses

Correlational analyses were undertaken to investigate patterns of association among open-ended responses at each grade level. Inspection of the correlation matrix for grade 4, which appears as Table 5.7, suggested a strong method effect: associations were strongest among items associated with the same stimulus passage.

Table 5.7
Correlation Matrix: Grade 4 Open-ended Responses

Stimulus/Objective	Correlation Coefficient						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Picture: detail	100						
(2) Picture: differences	20	100					
(3) Narrative: outcome	02	00	100				
(4) Narrative: character	10	11	15	100			
(5) Informative: detail	05	05	09	09	100		
(6) Informative: generalization	10	09	10	13	30	100	
(7) Informative: organize	17	20	06	15	26	39	100
(8) Poem: evaluate	07	13	00	05	08	09	07

Note: In this and subsequent tables of this type, decimals are implicit.

Results of a principal components factor analysis supported this conclusion. As shown in Table 5.8, three factors with eigenvalues greater than one emerged; they accounted for slightly more than 50% of the variance.

Table 5.8
Rotated Factor Matrix: Grade 4 Open-ended Responses

Stimulus/Objective	Factor 1	Factor 2	Factor 3
Picture: detail	.06	.65	.13
Picture: differences	.04	.73	.01
Narrative: outcome	.23	-.15	-.62
Narrative: character	.13	-.13	.83
Informative: detail	.73	-.04	-.03
Informative: generalize	.78	.09	.02
Informative: organize	.62	.37	-.15
Poem: evaluate	.08	.45	-.08
Eigenvalue	1.83	1.18	1.06
% variance	22.9	14.8	13.2

The three items associated with the informative passage load strongly on Factor 1, while those associated with the picture and the poem load on Factor 2, and the two narrative passage items load on Factor 3. Further, none of the loadings are ambiguous. At grade 4, then, student performance appears to be strongly influenced by the stimulus passage. It is interesting to note that the evaluative item about the poem loads with the two items which involved the picture. This result is certainly unexpected. As well, the negative loading on Factor 3 for the narrative outcome item is difficult to rationalize.

Table 5.9 displays the correlation matrix for grade 7 items, and presents a quite different pattern from that shown for grade 4. First, overall, the inter-item associations are stronger; further, variations cannot be explained in terms of stimulus material.

Table 5.9
Correlation Matrix: Grade 7 Open-ended Responses

Stimulus/Objective	Correlation Coefficients									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Informative: detail	100									
(2) Informative: generalize	23	100								
(3) Informative: organize	20	26	100							
(4) Poem: language	07	17	27	100						
(5) Poem: evaluation	14	19	21	22	100					
(6) Narrative: motivation	13	08	22	23	12	100				
(7) Narrative: outcome	16	16	24	23	13	26	100			
(8) Narrative: evaluation	10	11	08	15	20	17	03	100		
(9) Essay: evaluation	17	20	24	23	16	21	21	18	100	
(10) Narrative: attitude	04	20	28	25	21	19	13	13	07	100
(11) Narrative: character	04	07	03	15	15	07	32	10	31	08

The rotated factor matrix for a principal components factor analysis is shown in Table 5.10. Again, three factors with eigenvalues greater than one appeared; these accounted for approximately 44% of the variance. Method variance attributable to variations in stimulus material is not apparent here. In fact, it is difficult to perceive an organizing principle for the factor loadings. To some extent, the items which load heavily on Factor 1 are those which do not require extended responses or substantiation; the essay evaluation, however, required both. Items which loaded heavily on the second factor tended to require extended responses and substantiation; interpretation of poetic language and inference of a character's motivation were exceptions. The third factor is the least easily explained. Here two items have substantial loadings. The first of these required location of relevant detail in an informative passage; it has a high positive loading. The second involved personal evaluation of a poem; it has a strong negative loading.

Table 5.10
Rotated Factor Matrix: Grade 7 Open-ended Responses

Stimulus/Objective	Factor 1	Factor 2	Factor 3
Informative: detail	.29	.00	.66
Informative: generalize	.55	-.05	.28
Informative: organize	.62	.01	.24
Poem: language	.33	.49	.20
Poem: evaluation	.15	-.12	-.78
Narrative: motivation	.31	.45	.07
Narrative: outcome	.63	.17	-.06
Narrative: evaluation	-.08	.71	.11
Essay: evaluation	.49	.38	.01
Narrative: attitude	.64	.22	-.24
Narrative: character	.07	.53	-.12
Eigenvalue	2.57	1.25	1.03
% variance	23.3	11.4	9.4

As shown in Table 5.11, the strongest pattern of associations among open-ended items appeared at grade 10, where more than half of the coefficients exceeded .25. The largest coefficient, .51, involved a single objective, substantiates personal evaluation, which was associated with both the poem and the narrative passage.

Table 5.11
Correlation Matrix: Grade 10 Open-ended Responses

Stimulus/Objective	Correlation Coefficient (1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Narrative: character	100						
(2) Narrative: attitude	01	100					
(3) Narrative: evaluation	30	06	100				
(4) Informative: organize	38	21	21	100			
(5) Poem: narrator's attitude	20	12	20	40	100		
(6) Poem: evaluation	31	13	51	37	35	100	
(7) Essay: organize	32	08	18	35	24	32	100
(8) Essay: point-of-view	29	13	18	34	28	31	42

Note: Decimals are implicit.

The rotated factor matrix produced by a principal components analysis of the grade 10 open-ended items is shown in Table 5.12. Two factors with eigenvalues greater than one emerged; jointly they accounted for nearly 50% of the variance. Four items loaded heavily on each factor. Two items associated with the narrative, one with the poem and one with the personal essay loaded on the first factor, while one item from each stimulus loaded on the second. For several of the items, however, loadings are somewhat ambiguous. The pattern of associations can, to a limited extent, be explained in terms of the requirement to substantiate responses--items requiring such substantiation tended to load on the first factor.

Table 5.12
Rotated Factor Matrix: Grade 10 Open-ended Responses

Stimulus/Objective	Factor 1	Factor 2
Narrative: character	.65	.14
Narrative: attitude	-.26	.75
Narrative: evaluation	.74	.01
Informative: organize	.35	.61
Poem: narrator's attitude	.33	.54
Poem: evaluation	.70	.28
Essay: organize	.49	.40
Essay: point-of-view	.40	.50
Eigenvalue	2.84	1.05
% variance	35.5	13.1

5.10 Summary

Table 5.13 summarizes results of the open-ended items, indicating the percent of responses which were judged "minimally acceptable" or better for each stimulus/objective combination.

Overall, these results provide confirmation of the findings reported in Chapter 3: students at all grade levels demonstrate relatively high levels of literal comprehension, and of skill in organizing factual material. Levels of inferential comprehension are generally satisfactory; however, many students are unable to substantiate their inferences. Levels of critical comprehension are of some concern, particularly at grade 10, where few students demonstrated systematic strategies for evaluating materials. Finally, performance on items associated with poetry was relatively weak. This result, combined with data reported in Chapter 4 which indicated that many students do not encounter poetry in their classes, suggests that the reading of poetry for understanding and appreciation must be emphasized, particularly in intermediate and junior secondary grades.

Table 5.13
Summary: Percent of Open-ended Responses Judged to be "Minimally Acceptable"

Stimulus/Objective	Percent Acceptable Responses Grade 4	 Grade 7	 Grade 10
Picture:			
Selects relevant details	93.4	n/a	n/a
Recognizes differences	92.6	n/a	n/a
Narrative:			
Predicts outcome	90.8	67.7	n/a
Makes/substantiates inferences about character	65.8	74.3	76.6
Infers author's intent	n/a	64.7	75.8
Infers motivation	n/a	80.6	n/a
Substantiates personal evaluation	n/a	79.4	76.6
Poetry:			
Infers narrator's reaction	n/a	n/a	58.2
Interprets poetic language	n/a	82.7	n/a
Substantiates personal evaluation	39.0	66.6	57.8
Informative material:			
Locates relevant details	93.1	97.4	n/a
Makes generalizations	87.2	81.2	n/a
Locates/organizes information	77.5	83.8	85.7
Personal Essay:			
Organizes information	n/a	n/a	66.7
Infers author's point-of-view	n/a	n/a	33.9
Evaluates information	n/a	77.7	n/a

CHAPTER 6

ASSOCIATIONS AMONG BACKGROUND, ACHIEVEMENT, AND AFFECTIVE VARIABLES

6.1 Overview

In this chapter, first, associations among achievement domains and affective scales are described; next, achievement and attitude outcomes for selected subpopulations are presented; and, finally, a series of regresssion analyses are detailed in an attempt to explain the variance in student scores in terms of relative contributions of a series of background variables. Associations among background variables were described in Chapter 4; relationships among responses to open-ended items were presented in Chapter 5.

Except where otherwise noted, results reported in this chapter are based on a random sample of 2932 student responses at grade 4; 2860, at grade 7; and 2926, at grade 10. Sampling was stratified so as to produce an equal number of responses for each form of the achievement surveys.

6.2 Associations among Achievement Domains and Affective Scales

At each grade level, correlations among domain-level and total achievement scores were calculated using all responses drawn in the sample described above. Associations involving the affective scales, however, are form-dependent--each affective scale appeared on only one form of the achievement surveys; relevant analyses are based on approximately 1000 student responses.

6.2.1 Associations Among Achievement Domains

The correlation matrix for grade 4 achievement domains is displayed in Table 6.1.

Table 6.1
Correlation Matrix: Grade 4 Achievement Domains

Domain	Correlation Coefficient				
	(1)	(2)	(3)	(4)	(5)
(1) Understands words	100				
(2) Literal comprehension	61	100			
(3) Inferential comprehension	61	67	100		
(4) Locates/organizes information	55	60	60	100	
(5) Combined score	82	86	85	84	100

Note. Decimals are implicit.

Results are consistent with those described for the 1980 data (Tuinman and Kendall, 1980, p. 50): overall, the coefficients approach the limits imposed by their associated reliabilities. The strongest association appears between the two comprehension domains; the weakest involves Domain 1, Understands Words, and Domain 4, Locates/Organizes Information.

Table 6.2 includes the correlation matrix for grade 7, which appears above the diagonal, and that for grade 10, which appears below the diagonal. The grade 7 matrix is similar to that described for grade 4: coefficients approach their mathematical limits; and associations are strongest among the comprehension domains. Overall, the coefficients are somewhat smaller than those reported for grade 4; this result is attributable to the slightly smaller domain reliabilities associated with fewer items per domain.

The grade 10 matrix, shown below the diagonal, contains a greater range of coefficients for between-domain associations. Here, only correlations among the comprehension domains exceed .50; they are higher, in fact, than analogous correlations at grade 7. Associations involving Domains 1 and 5, however, are smaller. In the case of Domain 1, this can be explained in terms of relatively low internal consistency estimates. Results for Domain 5, however, appear to indicate a relatively smaller proportion of shared variance with the other domains.

Table 6.2
Correlation Matrices: Grades 7 and 10 Achievement Domains

Domain	Correlation Coefficient					
	(1)	(2)	(3)	(4)	(5)	(6)
(1) Words/expressions	100	49	52	51	50	76
(2) Literal comprehension	45	100	60	54	54	79
(3) Inferential comprehension	43	62	100	57	53	82
(4) Critical comprehension	48	62	65	100	52	76
(5) Locates/uses information	42	50	44	49	100	80
(6) Combined score	69	82	82	86	72	100

Note. Coefficients for grade 7 appear above the diagonal; those for grade 10 are below the diagonal. Decimals are implicit.

6.2.2 Associations Among Affective Subscales

As described in Chapter 2, the Estes Reading Attitude Scale produces a single score; no subscale structure is apparent. For the Value of Reading Scale, however, four subscales were confirmed. (These were described in Section 4.4.2.) Associations among these subscales, shown in Table 6.3, ranged from .18 to .39 at grade 4; from .14 to .32 at grade 7; and from .15 to .29 at grade 10. At all grade levels, the strongest associations appeared for the value of reading to enhance achievement with reading to acquire information and with reading to understand self and others.

Table 6.3
Associations among Value of Reading Subscales

Grade		Scale	Correlation Coefficients			
			(1)	(2)	(3)	(4)
4	(1)	Understanding	100			
	(2)	Pleasure	18	100		
	(3)	Achievement	32	24	100	
	(4)	Information	20	20	39	100
7	(1)	Understanding	100			
	(2)	Pleasure	14	100		
	(3)	Achievement	32	16	100	
	(4)	Information	19	19	27	100
10	(1)	Understanding	100			
	(2)	Pleasure	23	100		
	(3)	Achievement	29	17	100	
	(4)	Information	23	15	28	100

Note. Decimals are implicit.

Table 6.4 displays correlation matrices for the Reading Enjoyment Subscales (see Section 2.3) where students reported their typical levels of enjoyment for various types of reading material, including school textbooks. The subscale for periodicals includes magazines and newspapers; that for fiction/literary includes fiction, biography and materials assigned in language arts/English classes; informative material includes nonfiction (except biography) along with science and social studies texts. It is interesting to note that reported enjoyment of biography was much more strongly associated with enjoyment of fiction than with enjoyment of nonfiction. Consequently, it was assigned to the fiction/literary subscale.

As shown in Table 6.4, associations between reported enjoyment of comic/cartoon books and other materials are very low, particularly at grade 7 where the associations are negligible. Associations among the remaining subscales are strongest at grade 4; weakest, at grade 10. At grades 4 and 7, the strongest association--approaching .40--appears between fiction and nonfiction. At grade 10, this association is appreciably smaller, at .25; further, it is slightly smaller than the association between reported enjoyment of periodicals and of nonfiction. The association between enjoyment of periodicals and of fiction/literary materials shows a marked decrease with increasing grade level, from .32 at grade 4 to .22 at grade 7 and .17 at grade 10.

Table 6.4
Associations among Reading Enjoyment Subscales

Grade	Scale	Correlation Coefficients (1)	(2)	(3)	(4)
4	(1) Periodicals	100			
	(2) Comic/cartoon books	08	100		
	(3) Fiction/literary	32	06	100	
	(4) Nonfiction	33	07	38	100
7	(1) Periodicals	100			
	(2) Comic/cartoon books	00	100		
	(3) Fiction/literary	22	01	100	
	(4) Nonfiction	34	02	39	100
10	(1) Periodicals	100			
	(2) Comic/cartoon books	06	100		
	(3) Fiction/literary	17	05	100	
	(4) Nonfiction	27	09	25	100

Note. Decimals are implicit.

Overall, the data presented in Table 6.4 indicate that younger students tend to be more global in their reported enjoyment of reading while older students display increasingly articulated patterns of enjoyment. There is no systematic relationship between enjoyment of comic/cartoon books and enjoyment of other materials.

6.2.3 Associations between Achievement and Affective Outcomes

Tables 6.5 and 6.6 display correlation coefficients for each of the affective scales with each achievement domain and with the combined achievement score. Each column contains the coefficients for one domain; the last column presents coefficients which involve the combined score. Domains are referred to by number; their descriptive labels appeared previously in Tables 6.1 and 6.2.

At all grades, the Estes Attitude Scale (ERAS) is associated both significantly and substantially with each achievement domain and with the combined score. It is interesting to note that these associations tend to be strongest at grade 4, and weakest at grade 7. Within each grade, they tend to be consistent across domains, except for Domain 5 at grade 10 where the coefficient is substantially smaller than those associated with the comprehension domains.

The pattern of associations between the Value of Reading (VRS) subscales and achievement scores differs markedly across grade levels. At grade 4, the subscales related to the utility of reading (1) to obtain pleasure, (2) to enhance achievement, and (3) to obtain information, display similar patterns of associations across achievement outcomes, with coefficients ranging from .10 to .21. Associations for the information subscale are the strongest and range from .16 to .21. At grades 7 and 10, however, only scores for perceived value of reading to obtain enjoyment are significantly and positively associated; coefficients range from .09 to .19 at grade 7 and from .11 to .17 at grade 10. In both cases, the weakest association involves Domain 5, Locates/Uses Information; the strongest, Domains 3 and 4, which deal with inferential and critical comprehension. For the remaining VRS subscales, there are no significantly positive associations with achievement.

Table 6.5
Associations between Achievement and Affective Variables: Grade 4

Scale	Correlation Coefficients				
	Domain 1	Domain 2	Domain 3	Domain 4	Combined
Estes Reading Attitude	42	43	38	37	47
VRS: Understanding	04	03	00	05	04
VRS: Pleasure	10	14	14	14	16
VRS: Achievement	12	13	14	11	15
VRS: Information	19	17	16	16	21
RES: Periodicals	05	08	01	08	07
RES: Comic Books	-05	-01	02	-02	-01
RES: Fiction/Literary	11	10	11	05	11
RES: Nonfiction	06	05	07	05	07

Note. Decimals are implicit.

Tables 6.6 and 6.7 also present associations between the Reading Enjoyment (RES) subscales and achievement outcomes. At all grades, the strongest associations involve reported enjoyment of fiction/literary materials: the relationship of this subscale with achievement becomes stronger as grade level increases. At grade 4, the correlation with the combined achievement score is .11; at grade 7, .18; and at grade 10, .23. Enjoyment of comic books is not related to reading achievement at any grade level; correlations involving nonfiction are positive, but of small magnitude. The relationship between reported enjoyment of periodicals and student achievement is relatively small at grades 4 and 7, but increases by grade 10. Relevant coefficients for the periodicals subscale range from .01 to .08 at grade 4; from .04 to .09 at grade 7; and from .11 to .17 at grade 10.

Table 6.6
Associations between Achievement and Affective Variables: Grades 7 and 10

Grade/scale	Correlation Coefficients					
	Dom 1	Dom 2	Dom 3	Dom 4	Dom 5	Combined
7						
Estes Reading Attitude	32	30	31	31	26	37
VRS: Understanding	-03	-03	-02	-01	-06	-06
VRS: Pleasure	17	12	19	19	09	18
VRS: Achievement	-06	-02	-05	-07	-06	-08
VRS: Information	04	02	04	01	01	01
RES: Periodicals	09	06	08	04	07	08
RES: Comic Books	03	06	01	02	05	05
RES: Fiction/Literary	17	14	16	17	11	18
RES: Nonfiction	04	-02	-01	<01	02	<01
10						
Estes Reading Attitude	32	37	36	38	26	42
VRS: Understanding	-05	-03	05	-05	-12	-07
VRS: Pleasure	18	20	23	23	14	23
VRS: Achievement	-04	-03	-02	-06	-10	-08
VRS: Information	<01	-01	-02	-04	-07	-04
RES: Periodicals	16	13	14	13	11	17
RES: Comic Books	-06	-01	-04	-03	01	-03
RES: Fiction/Literary	18	16	19	21	16	23
RES: Nonfiction	08	04	<01	01	08	05

6.3 Associations between Background Variables and Achievment

This section presents achievement survey scores for subpopulations of students as defined by selected background characteristics, and examines relationships between student characteristics and performance on the open-ended items which appeared on Form Q.

6.3.1 The Achievement Surveys

Tables 6.7 and 6.8 present mean total achievement scores for selected subpopulations. Typically, the pattern of results for domain-level scores mirrored those for total scores.

Data displayed in Table 6.7 summarize differences among students according to selected background characteristics. Entries are mean total scores, expressed as percentages. Mean scores for the total sample at each grade level are given in the first line of the table; associated standard deviations appear in a footnote. It is important to keep in mind that comparisons of mean percent correct across grade levels are inappropriate, in view of variations in content and difficulty level.

Table 6.7
Summary: Achievement Scores According to
Selected Background Characteristics

Subgroup		Mean Percent Correct		
		Grade 4	Grade 7	Grade 10
Total sample		72.23	73.13	68.73
Gender:	Female	73.15	74.65	69.88
	Male	71.20	71.68	67.60
English first language:	Yes	72.78	73.80	69.85
	No	68.48	69.03	64.00
Home language:	English	72.88	73.73	69.35
	Other	65.80	66.28	60.68
Attends learning assistance:	Yes	59.15	58.45	59.15
	No	76.75	75.10	70.05
Books in home:	<25	63.33	58.58	52.10
	25-99	69.43	69.38	64.45
	100-249	73.60	73.83	69.48
	250-499	75.48	75.93	71.76
	500+	73.58	76.40	72.53
Father[a]:	did not complete high school			64.65
	completed high school			67.25
	technical/vocational education			72.25
	some university			71.28
	university degree			74.50
Postsecondary plans:	University			77.05
	Other education			65.74
	Undecided			65.05
	Workforce			54.61

Note. Standard deviations for total sample: Grade 4 = 18.84%; Grade 7 = 17.32%; Grade 10 = 17.98%.

[a] Results by mother's education are virtually coincidental.

Examination of Table 6.7 indicates that girls enjoy a slight advantage at each grade level; although the differences according to gender are modest, they are statistically significant. Students who speak English as a second language performed below the mean at all grade levels; differences are greater for those who do not now speak English at home. Students who reported attending learning assistance achieved scores both significantly and substantially below the mean; the difference is greatest at grades 4 and 7.

Home environment is strongly associated with achievement: at all grades, students who report few books in their homes received scores substantially below the mean. The differences appear to be magnified by increasing grade levels. At grade 10, for example, students who reported fewer than 25 books performed, on average, nearly one standard deviation below the mean. In fact, they achieved the lowest mean score of any grade 10 subgroup. Level of parents' education was also strongly associated with performance at grade 10. Students whose parents did not complete high school scored significantly below the mean; those whose parents completed some postsecondary training were above the mean.

Table 6.8 presents mean achievement scores according to selected leisure behaviour characteristics, using the same format as Table 6.8. At all grade levels, students who reported low levels of involvement in reading--no time spent reading on the previous day; no library books borrowed in the previous month; reading a book the least desirable leisure activity--received relatively low achievement scores, as did those who reported at least four hours of television watching. Conversely, those who spent more than one-half hour reading, who borrowed more than six library books, and who reported reading a book as their most likely leisure activity achieved substantially higher scores.

When most and least likely leisure activities were examined, some unanticipated findings emerged. At grade 4, students who said they were most likely to read magazines, given several hours of free time, received the lowest achievement scores; at grade 7, analogous scores were still significantly below the mean, although the magnitude of the difference was less; and, at grade 10, scores were not significantly different from the mean. Further, at all grades, students who indicated magazine reading as their least likely leisure activity achieved relatively high scores. Grades 7 and 10 students who indicated that they were most likely to go to a movie achieved the lowest scores of all groups. As well, at all grade levels, those who reported that they were least likely to use leisure time to attend a movie achieved the highest scores. Given the increasing availability of movies in the home, this association is worthy of further investigation.

6.3.2 Open-ended Items

Table 6.9 summarizes associations between selected background variables and student performance on the open-ended Form Q items. At each grade level, the composite scores for Form Q are factor scores obtained from a single-factor solution. Where necessary, data from the background questionnaire was recoded to create either continuous or dichotomous variables for the correlational analyses. Results presented here are based on 281 cases at each of grades 4 and 7; 288 cases at grade 10.

Table 6.8
Summary: Achievement Scores According to Selected Leisure Behaviour Characteristics

Subgroup		Mean Percent Correct		
		Grade 4	Grade 7	Grade 10
Total sample		72.23	73.13	68.73
Reading yesterday:	none	67.48	67.45	63.70
	<1/2 hour	72.38	71.83	67.53
	1/2-1 hour	75.53	75.15	70.60
	1+ hours	76.88	78.58	75.23
Library books last month:	none	64.15	68.73	65.70
	1-2	67.28	70.40	68.45
	3-5	73.10	71.98	70.40
	6+	74.15	76.08	73.55
TV yesterday:	none	73.53	75.13	70.93
	<1 hour	72.55	74.38	71.35
	1 hour	73.88	74.98	69.83
	2 hour5s	73.48	74.78	68.65
	3 hours	72.08	72.63	67.05
	4+ hours	69.15	68.88	65.43
Most desirable:	Book/story	78.65	80.83	75.30
	Game/sport	73.28	72.60	68.93
	Television	69.48	71.60	66.40
	Movie	68.30	67.90	63.40
	Magazine	66.32	71.15	68.65
Least desirable:	Magazine	74.40	75.00	71.42
	Movie	76.05	77.85	72.68
	Television	71.48	70.50	70.53
	Game/sport	65.53	69.70	67.55
	Book/story	67.43	67.80	64.18

Note. Standard deviations for total sample: Grade 4 = 18.84%; Grade 7 = 17.32%; Grade 10 = 17.98%.

Table 6.9 displays a number of interesting patterns across grade levels. Gender is most strongly associated with performance at grade 7, followed by grade 10. At grade 4, the association is positive, but it is not statistically significant. Grade 7 girls performed substantially better than their male counterparts and grade 10 girls maintained much of that advantage. Clearly, during the intermediate grades, boys in many B.C. classrooms are acquiring the skills and competencies required by these items more slowly than are girls. This result is cause for serious concern.

Table 6.9
Summary: Associations between Background Variables and Performance on the Open-ended Items (Form Q)

Background Variable	Correlation Coefficient Grade 4	 Grade 7	 Grade 10
Gender (male = 1; female = -1)	ns	-21	-15
Number of books in home	13	14	22
First language English	11	11	ns
Home language English	ns	16	ns
Attends learning assistance	-29	-19	-22
Attends ESL classes (now)	ns	-18	ns
Has attended ESL (ever)	ns	ns	-17
Amount of TV yesterday	ns	ns	-15
Amount of reading yesterday	25	23	20
Number of library books	13	19	22
Reading is most likely activity	ns	20	ns
Reading is least likely activity	-12	-25	-17
Father's education	-	-	16
Mother's education	-	-	17
Plans to attend university	-	-	36
Plans other postsecondary education	-	-	-14
Plans no postsecondary education	-	-	-29

Note. Student performance across items was combined as a single factor score. For these and subsequent correlational analyses, background variables were recoded to form equal intervals or to provide dichotomies. Table entries are Pearson's product-moment coefficients and point-biserial coefficients. Only statistically significant (.05) relationships are shown here (ns = not significant).

At all grades, students with higher numbers of books in their homes achieved higher scores; for this variable, the association is strongest at grade 10. Apparently, the effects of sociocultural background on reading performance increase with increased years of schooling.

For the open-ended items, the advantages of speaking English as a first language and as the dominant home language are greatest at grade 7, as is the association between current ESL placement and performance. The association between total ESL experience and performance is greatest at grade 10.

At all grade levels, students who reported that they currently attend learning assistance achieved substantially lower scores than other students. For grade 4, the relevant coefficient of -.29 is the strongest in Table 6.9; coefficients of -.19 and -.22 for grades 7 and 10 are somewhat weaker.

The amount of time students spent reading on the previous day was positively associated with performance, as was the number of library books borrowed in the previous month. Amount of television watched was negatively associated with performance; the association was significant only at grade 10. Associations between student reaction to reading as a likely leisure activity were significant only at grade 7. At grade 7, the choice of reading as the students' least likely leisure activity displayed the strongest association with performance (-.25) among all the background variables.

Grade 10 students responded to additional questions about their parents' education and their own future plans. Associations of these variables with the Form Q responses are similar to those reported earlier for the achievement surveys (see Table 6.8). Both father's and mother's education were positively associated with performance. The strongest positive correlation associated with grade 10 performance was .36 for plans to attend university; the strongest negative association, -.29, appears for plans to enter the workforce directly from high school.

Overall, the associations shown in Table 6.9 are convergent with results presented in Tables 6.7 and 6.8. Student performance on the open-ended Form Q items displayed a similar pattern of associations with background characteristics to that for performance on the multiple-choice items presented on the achievement surveys, although grade 7 Form Q performance was much more strongly associated with gender.

6.4 Associations between Background Variables and Affective Outcomes

This section describes associations between selected background variables and the three affective scales which appeared on Forms R, S, and T at each grade level. First, associations with the Estes Reading Attitude Scale (ERAS) are shown as subpopulation means. Significance was tested using oneway analyses of variance. Next, associations with the Value of Reading subscales and the Reading Enjoyment subscales are shown as correlation coefficients.

6.4.1 Estes Reading Attitude Scale

Table 6.10 summarizes associations between selected background variables and scores on the Estes Reading Attitude Scale (ERAS). Results are based on samples of 968, 952, and 991 student responses at grades 4, 7, and 10, respectively, and are shown as mean raw scores with a range of 15 (extremely negative) to 75 (extremely positive) and a midpoint of 45 (neutral).

Table 6.10
Summary: Estes Reading Attitude Scale Scores for
Selected Subgroups of Students

		Mean Raw Score		
Subgroup		Grade 4	Grade 7	Grade 10
Total sample[a]		55.03	54.61	53.72
Girls only		56.91	56.39	57.09
Boys only		53.22	52.74	50.58
Books in home:	<25	51.49	50.43	41.93
	25-99	52.24	52.24	51.49
	100-249	55.97	55.73	53.62
	250-499	56.53	55.85	55.65
	500+	56.88	56.13	56.88
Attends learning assistance:	Yes	52.03	51.53	51.05
	No	55.70	55.21	54.03
Television yesterday:	none	56.61	56.54	55.77
	<1 hour	56.06	55.58	54.99
	1 hour	55.61	55.11	55.80
	2 hours	55.44	54.94	54.45
	3 hours	53.81	53.76	52.78
	4+ hours	53.20	52.28	49.24
Reading yesterday:	none	50.75	50.17	47.35
	<1/2 hour	54.77	54.23	52.17
	1/2-1 hour	57.42	57.16	56.63
	1+ hour	61.09	60.66	60.95
Library books last month:	none	52.98	51.80	49.16
	1-2	52.57	52.07	52.01
	3-5	55.55	54.84	56.77
	6+	61.09	55.43	60.76
Postsecondary plans:	University			57.66
	Other education			53.46
	Undecided			51.56
	Workforce			46.14

[a] Standard deviations: Grade 4 = 9.94; Grade 7 = 10.07; Grade 10 = 10.82.

Overall, girls demonstrated more positive attitudes than did boys. This difference increases substantially between grades 7 and 10: girls' scores increase slightly, while boys' scores decline. Home environment makes a substantial impact on attitude. Further, its influence appears to increase with grade level: grade 10 students who reported fewer than 25 books in their homes were the only subgroup whose average score was below the scale midpoint.

Table 6.10 also displays results of the ERAS according to postsecondary plans of grade 10 students: on average those who plan to attend university scored above the mean; those who plan to enter the workforce directly displayed relatively negative attitudes toward reading.

Overall, results presented in Table 6.10 are not surprising: students who attend learning assistance, who watch extreme amounts of television and who report little leisure reading typically obtained lower attitude scores. Avid readers received extremely high scores. It is worth noting that language background, which is not reported in Table 6.10, showed a slight association with ERAS scores at grade 4, but none at grade 7 or 10.

6.4.2 Value of Reading Scale (VRS)

Table 6.11 summarizes significant associations between selected background characteristics and the four Value of Reading subscales: (1) gaining understanding; (2) deriving pleasure; (3) enhancing achievement; and (4) acquiring information.

At all grade levels, girls were more likely to assign high values to reading to understand self/others than were boys. Conversely, boys were more likely to assign high values to reading to acquire information.

At grade 4, children who spoke English as a first language were less likely to ascribe high values to reading for understanding or pleasure than their English-second-language counterparts. At grade 10, students who spoke English as a second language assigned higher values to reading as a means of enhancing school achievement.

Grades 7 and 10 students who reported relatively high numbers of books in their homes assigned higher values to reading for pleasure; at grades 4 and 7, students attending learning assistance assigned relatively low values to this subscale.

High levels of television watching were associated with low values for reading for pleasure at grades 4 and 10, and with low values of reading for understanding at grade 7. The strength of associations between leisure reading and library borrowing increased with grade level. At grade 4, both these variables were positively associated with reading for pleasure; library books, with reading to acquire information. At grade 7, both variables were positively associated with both reading for understanding and reading for pleasure. At grade 10, the strength of these associations increased; as well, both variables were positively associated with reading to enhance achievement.

There were few differences between students who selected reading as their most likely leisure activity and those who selected other activities. On the

Table 6.11
Summary: Significant Associations between Background Variables and Value of Reading Subscales

		Correlation with VRS subscale[a]			
Grade	Background Variable	(1)	(2)	(3)	(4)
4	Gender (male = 1; female = -1)	-09	ns	ns	12
	English first language	-09	-07	ns	ns
	Books in home	ns	ns	ns	ns
	Attends learning assistance	ns	-07	ns	-09
	Attends ESL now	ns	ns	-07	ns
	Amount of TV	ns	-08	ns	ns
	Amount of reading	ns	17	ns	ns
	Number of library books	ns	08	ns	07
	Reading most likely activity	ns	ns	ns	ns
	Reading least likely activity	ns	-11	ns	ns
7	Gender (male = 1; female = -1)	-14	ns	ns	14
	English first language	ns	ns	ns	ns
	Books in home	ns	09	-07	ns
	Attends learning assistance	ns	-08	ns	ns
	Attends ESL now	ns	ns	ns	ns
	Amount of TV	-08	ns	ns	ns
	Amount of reading	11	27	ns	ns
	Number of library books	08	17	ns	ns
	Reading most likely activity	ns	ns	ns	09
	Reading least likely activity	ns	-25	ns	ns
10	Gender (male = 1; female = -1)	-16	-08	ns	07
	English first language	ns	ns	-08	ns
	Books in home	ns	10	ns	ns
	Attends learning assistance	11	ns	ns	ns
	Attends ESL now	ns	ns	ns	ns
	Amount of TV	ns	-08	ns	ns
	Amount of reading	14	28	08	ns
	Number of library books	15	21	09	ns
	Reading most likely activity	11	ns	ns	ns
	Reading least likely activity	-14	-26	-08	ns
	Father's education[b]	ns	10	ns	ns
	Plan to attend university	ns	20	11	07
	Plan other postsec. education	ns	-10	ns	ns
	Plan no postsec. education	ns	-13	ns	ns

Note. For this and subsequent tables only correlations which are statistically significant (.05) have been reproduced here (ns = not significant). Coefficients are product-moment or point-biserial as appropriate.

[a] VRS subscales: (1) understanding (2) pleasure (3) school achievement (4) information.

[b] Associations involving mother's education are congruent.

other hand, students who selected reading as their least likely activity tended to ascribe low values to reading for pleasure--particularly at grades 7 and 10--as well as to reading for understanding or to enhance achievement at grade 10.

As noted previously, grade 10 students provided information about their parents' education and their own future plans. Higher levels of parental education were associated with higher values for reading for pleasure. Students planning to attend university ascribed relatively high values to reading for pleasure, to enhance achievement, and to acquire information; those who planned to attend other postsecondary institutions or to join the workforce directly from high school assigned relatively low values to reading for pleasure.

Overall, the pattern of associations was strongest for the subscale related to pleasure and enjoyment and weakest for the subscales related to enhancing school achievement and acquiring information. Associations of background variables with reading for understanding and for pleasure increased with grade level.

6.4.3 Reading Enjoyment Scale (RES)

Table 6.12 summarizes significant associations between selected background variables and the four Reading Enjoyment subscales which relate to reported enjoyment of reading: (1) periodicals (2) comic/cartoon books (3) fiction/literary materials; and (4) nonfiction. At all grades, girls reported greater enjoyment of fiction and literary materials; boys, of informative materials. These results are consistent with those reported earlier for the Value of Reading Scale. At grade 7, boys reported significantly higher levels of enjoyment of comic books; at grade 10, of periodicals.

At all grades, students who reported that English was their second language tended to report higher levels of enjoyment of nonfiction; at grades 7 and 10, they reported greater enjoyment for all materials.

High levels of television watching were associated with enjoyment of comic books at grades 4 and 10, and with low levels of enjoyment of fiction at all grade levels. Amount of reading was consistently positively associated with enjoyment of periodicals, fiction, and nonfiction; the same pattern of associations appeared for library use at grades 7 and 10.

At all grades, students who identified reading a book as their most likely leisure activity reported relatively high enjoyment of periodicals and, at grades 7 and 10, nonfiction. Students who identified reading as their least likely leisure activity tended to report very low levels of enjoyment of fiction.

For grade 10 students, parental education was associated with relatively high levels of enjoyment for periodicals and fiction. Students who reported plans to attend university were more likely to report high levels of enjoyment for all materials except comic books; students who reported plans to enter the workforce directly from high school reported relatively low levels of enjoyment for periodicals and fiction.

Table 6.12
Summary: Significant Associations between Background Variables and Reading Enjoyment Subscales

		Correlation with RES subscale[a]			
Grade	Background Variable	PER	CB	LIT	NF
4	Gender (male = 1; female = -1)	ns	ns	-21	14
	English first language	ns	ns	ns	-09
	Books in home	10	ns	ns	08
	Attends learning assistance	ns	ns	-12	-15
	Attends ESL now	ns	ns	ns	ns
	Amount of TV	ns	07	-14	ns
	Amount of reading	15	ns	11	11
	Number of library books	08	ns	ns	ns
	Reading most likely activity	09	ns	07	11
	Reading least likely activity	ns	ns	-21	ns
7	Gender (male = 1; female = -1)	ns	14	-24	28
	English first language	-09	-07	-12	-12
	Books in home	ns	-07	ns	ns
	Attends learning assistance	ns	ns	ns	ns
	Attends ESL now	ns	ns	ns	09
	Amount of TV	-07	ns	-17	-10
	Amount of reading	13	ns	26	14
	Number of library books	15	ns	24	18
	Reading most likely activity	19	ns	ns	23
	Reading least likely activity	ns	ns	-29	ns
10	Gender (male = 1; female = -1)	07	ns	-36	24
	English first language	-07	-07	-07	-10
	Books in home	ns	ns	ns	ns
	Attends learning assistance	ns	ns	-07	ns
	Attends ESL now	ns	ns	ns	ns
	Amount of TV	ns	15	-16	ns
	Amount of reading	07	ns	26	11
	Number of library books	08	ns	19	11
	Reading most likely activity	12	ns	ns	16
	Reading least likely activity	ns	ns	-33	ns
	Father's education[b]	07	ns	ns	ns
	Plan to attend university	11	ns	11	11
	Plan other postsec. education	ns	ns	ns	ns
	Plan no postsec. education	-12	ns	-15	ns

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[a] RES subscales: PER = periodicals; CB = comic books; LIT = fiction/literary; NF = nonfiction.

[b] Associations involving mother's education are congruent.

6.5 Prediction of Student Outcomes

In order to examine the simultaneous contributions of student background characteristics to student outcomes, a series of stepwise multiple regression analyses were completed. An a priori model (Kerlinger & Pedhazer, 1973) was employed, with variables eligible to enter the equation in the following order:

1. Gender.
2. Language background: First language; home language.
3. Socio-cultural status: Number of books in home; father's education (grade 10 only); mother's education (grade 10 only).
4. Instructional status: Attends learning assistance; attends ESL classes now; has attended ESL classes (ever).
5. Leisure behaviour: Amount of reading yesterday; library use; amount of TV yesterday; reading as most likely leisure activity; reading as least likely leisure activity.
6. Future plans (grade 10 only): Plans to attend university; plans to attend other postsecondary institution; plans no education after high school.
7. Interactions: First order interactions of gender with the variables listed above.

This model was used to predict student performance on the achievement surveys (combined score) and on the open-ended Form Q items (factor score). The analyses were replicated, with affective scale results allowed to enter the equation before leisure behaviour, for each of Forms R (Estes Scale as a predictor), S (Value of Reading subscales as predictor), and T (Reading Enjoyment subscales as predictors). Finally, the basic model shown above was used to predict Estes Reading Attitude Scale results for Form T at each grade level.

For all analyses, only those variables which caused a significant increase (at $p < .05$) in the proportion of explained variance were allowed to enter the equations. In ensuing sections, tables summarizing results present increases in R-squared (proportion of variance explained) for significant predictors, along with R-squared for the full model, and the associated degrees of freedom. In an a priori model, the increase in explained variance attributed to each variable--or set of variables--is interpreted as the proportion of variance in the dependent variable which is explained or predicted after effects of previously entered variables have been accounted for or partialled out. It represents, then, a unique contribution to prediction of the dependent measure at that point in the analysis.

Dichotomous variables, such as gender and language background, were effect-coded for these analyses; where necessary, background variables were recoded to produce equal intervals or a dichotomy.

6.5.1 Prediction of Achievement Survey Scores from Common Background Questions: Grades 4, 7, and 10

Table 6.13 presents results of the analyses described above with only those variables which were available at all grade levels used to predict total within-grade achievement scores across Forms R, S, and T. Results shown in Table 6.13 indicate that:

1. At all grades, gender makes a small but significant contribution to the equation. It accounts for a slightly larger increase in R-squared at grade 7.

2. Language background accounts for a further 1% to 2% of the variance. Most of this increase is associated with dominant home language; once home language has entered the equation, little or no prediction is gained from the entry of first language.

3. When the effects of gender and language background are controlled, the number of books in students' homes make a significant contribution to the explained variance; the contribution of this variable increases with grade level.

4. Assignment to learning assistance makes the largest single contribution to the equation at all grade levels. With gender, language background, and books in the home controlled, learning assistance contributes a further 11% to prediction of achievement scores at grade 4; 9% and 4% at grades 7 and 10 respectively. This result suggests that students who are assigned to learning assistance are, indeed, relatively weak in terms of reading skills, particularly during elementary grades. Attendance in ESL classes adds somewhat less than 1% to the explained variance.

5. The set of leisure behaviour variables adds between 4% and 6% to the prediction of achievement scores when previously described variables are controlled. Among the leisure variables, the strongest predictor is amount of reading reported for the previous day.

6. First order interactions involving gender are negligible. That is, the slopes of the respective regression lines for the variables described here are no different for girls than for boys.

The full model explains 18% of the variance at grade 4, 20% at grade 7, and 15% at grade 10. The reduction in prediction at grade 10 is largely due to the relatively small contribution made by assignment to learning assistance.

Clearly, these equations explain a relatively small proportion of the variance in student reading performance; this result is not surprising, given the absence of any cognitive ability measures in the analyses. The relative contributions of these variables both within and across grade levels, however, are illuminating. For example, it is clear that the effect of reading materials in the home increases with grade level, as does the effect of a dominant home language other than English. At all grades, amount of television watched makes only a small contribution when amount of reading and aversion to reading ("least likely activity") have been accounted for.

Table 6.13

Summary: Prediction of Achievement Survey Scores Using Background Information Common to Grades 4, 7, and 10

Step	Variable	Increase in R-squared		
		Grade 4	Grade 7	Grade 10
1	Gender	.003	.007	.003
2	Language background			
	Home language	.009	.011	.017
	First language	none	.002	.003
3	Books in home	.011	.022	.027
4	Instructional placement			
	Learning assistance	.108	.086	.038
	ESL ever	none	.008	.008
	ESL now	.005	none	.001
5	Leisure behaviour			
	Reading yesterday	.022	.035	.034
	Library use last month	.011	.005	.004
	Reading least likely activity	.007	.017	.013
	Reading most likely activity	.003	none	none
	Television yesterday	.002	.006	.004
6	Interactions with gender	none	none	.002
	Full model	.181	.199	.154
	Residual	.819	.801	.846
	(df)	(10, 2695)	(10, 2723)	(12, 2746)

6.5.2 Effects of Additional Predictors

Subsequent analyses were undertaken to examine the effects of (1) adding the affective scales to the equations and (2) adding parental education and future plans to the grade 10 equation. These analyses are summarized in Tables 6.14 and 6.15. In these tables, increases in the proportion of explained variance are shown for the sets of variables defined earlier rather than for individual variables as in Table 6.13. It should be noted that analyses involving affective variables were restricted to results for one of the three test forms: each scale appeared on only one form. Consequently, the total degrees of freedom available for each of these analyses were approximately one-third of those associated with the previous cross-form analyses.

Table 6.14 summarizes the explanation of within-form achievement scores at grades 4 and 7 using the a priori model described earlier, with the relevant affective scale or subscale scores allowed to enter the equation at step 5.

Form R contained the Estes Reading Attitude Scale (ERAS). At grade 4, the entry of this variable at step 5 of the regression analysis caused an increase of 16% in the explained variance; at grade 7, the increase was somewhat lower at 11%. The full model explained 32% of the variance in Form R scores at grade 4; 28%, at grade 7. When these analyses are compared to those displayed in Table 6.13, it is clear that ERAS scores share considerable variance with self-reports of leisure behaviour. When ERAS scores precede the leisure variables in the equation, little explanation is gained from the addition of the leisure vairables. At the same time, the total explained variance is substantially increased from 18% to 32% at grade 4 and from 20% to 28% at grade 7.

The next set of entries in Table 6.14 deal with explanation of Form S scores, with the Value of Reading (VRS) subscales entered at step 5. At both grade 4 and 7, the addition of these subscales causes a significant increase in explained variance at that point in the analysis; however, the presence of the VRS subscales in the equation appears to cause a reduction in the predictive contributions of the leisure variables which were allowed to enter at step 6. Thus, inclusion of the VRS subscales causes only a slight increase in the variance explained by the full model when compared with data presented in Table 6.13.

The final set of entries in Table 6.14 deal with explanation of Form T achievement scores; here, the Reading Enjoyment (RES) subscales were permitted to enter the equation at step 5. At grade 4, the RES subscales caused a significant increase in R-squared; they added a total of less than 1%. At grade 7, the RES subscales combined to add more than 5% to the explained variance. It is interesting to note that the Form T equations predict the smallest proportion of the variance in achievement scores when the four sets of analyses summarized in Tables 6.13 and 6.14 are considered. At grade 7, this result is due to the relatively weak combined effects of gender, language background, books in the home, and instructional placement on Form T scores compared to those for Form R, Form S, or the three forms combined. This cross-form difference is worthy of further examination to determine whether Form 7T materials differ in some systematic way from those presented on Forms 7R and 7S.

Table 6.15 displays results for only grade 10; both within-form analyses, which include the affective scales, and the cross-form analyses, which do not, are presented. These analyses differ from those presented earlier in two important aspects: parental education levels were permitted to enter the equations at step 3 along with number of books in the home, and students' postsecondary aspirations were permitted to enter the equations, following all other background variables. These variables contributed substantially to prediction of achievement outcomes. As shown in the final column of Table 6.15, parental education added 5% and future plans more than 7% to explanation of achievement scores when all forms were combined in the analysis. The total explanation of 26% of the variance is substantially greater than the 15% shown in Table 6.13 where parental education and future plans were not considered.

Table 6.14
Summary: Within-form Prediction of Achievement Survey Scores Using Background Information and Affective Scale Results: Grade 4 and 7

Form	Step	Variable set	Increase in R-squared Grade 4	Increase in R-squared Grade 7
R	1	Gender	.008	.017
	2	Language background	.010	.014
	3	Books in home	.014	.015
	4	Instructional placement	.114	.117
	5	Estes Reading Attitude Scale	.161	.109
	6	Leisure behaviour	.009	.008
	7	Interactions with gender	none	.004
		Full model	.316	.284
		(df)	(7, 889)	(9, 874)
S	1	Gender	.007	.011
	2	Language background	.013	.010
	3	Books in home	.006	.039
	4	Instructional placement	.127	.079
	5	Value of Reading subscales	.004	.026
	6	Leisure behaviour	.028	.046
	7	Interactions with gender	.004	none
		Full model	.211	.222
		(df)	(11, 895)	(9, 870)
T	1	Gender	none	.005
	2	Language background	.010	none
	3	Books in home	.015	.016
	4	Instructional placement	.108	.072
	5	Reading Enjoyment subscales	.006	.054
	6	Leisure behaviour	.029	.050
	7	Interactions with gender	.004	none
		Full model	.172	.197
		(df)	(6, 896)	(9, 860)

The contribution of future plans cannot be explained in terms of shared variance with other background attributes such as gender, language background, or sociocultural background--effects of these variables, along with instructional placement and leisure behaviour, were partialled out before the set of future plans variables were allowed to enter.

The remaining columns in Table 6.15 summarize within-form analyses which incorporated the available affective scale at step 5. In all cases, total explanation is enhanced by the addition of the affective scales. Prediction is strongest for Form R, where the ERAS adds nearly 12% to the explained variance, although subsequent contributions of leisure behaviour and future plans are reduced.

Table 6.15
Summary: Prediction of Grade 10 Achievement Survey Scores

		Increase in R-squared[a]			
Step	Variable set	Form R	Form S	Form T	Combined
1	Gender	.006	none	none	.003
2	Language background	.022	.023	.015	.020
3	Sociocultural background	.077	.050	.050	.063
	(parental education)	(.057)	(.063)	(.045)	(.050)
	(books in home)	(.020)	(.101)	(.005)	(.013)
4	Instructional placement	.047	.037	.065	.049
5	Affective scales	.117	.064	.057	n/a
	(Form R: ERAS)	(.117)	n/a	n/a	n/a
	(Form S: VRS)	n/a	(.064)	n/a	n/a
	(Form T: RES)	n/a	n/a	(.057)	n/a
6	Leisure behaviour	.006	.019	.023	.049
7	Future plans	.049	.079	.074	.074
	(University)	(.036)	(.047)	(.074)	(.060)
	(No postsecondary)	(.013)	(.032)	(none)	(.014)
8	Interactions with gender	.004	none	none	none
	Full model	.328	.295	.284	.258
	(df)	(14, 851)	(14, 856)	(12, 861)	(16, 2629)

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[a] Affective scales were unique to forms; thus, no affective scale could be entered into the cross-form equation.

For Form S, the VRS subscales add 6% to prediction; subsequent contributions of leisure behaviour are somewhat reduced, but those of future plans are not. Results are similar for Form T, where the RES subscales were included in the analysis.

It is interesting to compare the contributions of the three affective scales across grade levels. Although analyses presented in Tables 6.14 and 6.15 are not strictly comparable due to the prior entry of parental education at grade 10, some trends are apparent:

- The unique contribution of the ERAS to the model used decreases substantially between grade 4 and 7; between grade 7 and 10, however, there is little change.
- Contributions of the VRS subscales appear to increase steadily with increasing grade level.
- Contributions of the RES subscales increase substantially between grade 4 and 7; there is little change between grades 7 and 10.

These results suggest that the relationships between affect and achievement are complex; they appear to vary both with level of schooling--or age--and with the facet of affect which is measured. Further research into the nature and development of the constructs and relationships involved is warranted.

6.5.3 Prediction of Open-ended Form Q Results

Multiple regression analyses used to explain the variance in achievement survey scores in terms of the background information available were replicated to explain the variance in the open-ended Form Q achievement items. Results are summarized in Table 6.16. At each grade level, composite achievement scores--the dependent measure in each case--are factor scores obtained by single-factor principal components factor analyses. Zero-order correlations which are relevant to these analyses were shown in Table 6.9.

Analyses of the Form Q results are based on between 289 and 298 cases at each grade level; thus, the increase in R-squared required for a significant contribution to the equation is substantially larger than those found to be significant for previous analyses. Typically, only those individual variables which added a minimum of 1% to the explained variance were permitted to enter the equations.

As described earlier, the affective scales which appeared on the achievement surveys (Forms R, S, and T) were replaced by a short series of open-ended questions about reading behaviour and perceptions. Data produced by responses to these items were classificatory in nature; thus, no affective scale scores were available as predictors of the factor scores for Form Q achievement.

Table 6.16 summarizes results of the regression analyses for Form Q. In this table, the combined contribution of the sets of variables which were allowed to compete for entry at a single step are shown, rather than the contributions of individual variables.

Table 6.16
Summary: Prediction of Factor Scores for Form Q Open-ended Items within Grade Level

Step	Variable set	Increase in R-squared Grade 4	 Grade 7	 Grade 10
1	Gender	none	.043	.021
2	Language background	none	.031	none
3	Books in home[a]	.017	none	.050
4	Instructional placement	.078	.050	.064
5	Leisure behaviour	.048	.064	.049
6	Future plans (Gr. 10 only)	n/a	n/a	.104
	Full model	.143	.188	.288
	(df)	(3, 289)	(6, 281)	(9, 289)

[a] For grade 10 students only, parental education was eligible to enter the equation at step 3 along with books in the home; however, it did not make a significant contribution to the equation.

As shown in Table 6.16 above, the full model accounted for approximately 14% of the variance in grade 4 Form Q factor scores; approximately 19% in grade 7 scores; and close to 29% in grade 10 scores. The increase in the proportion of variance explained at grade 10 is directly attributable to the addition of future plans as the final predictor set at that grade level.

It is interesting to note that gender, entered first in the equation, predicts more than 4% of the variance at grade 7, but fails to meet the criteria for entry at grade 4. Language background causes a significant increase in explained variance only at grade 7. On the other hand, number of books in the home accounts for an increase of 5% at grade 10, less than 2% at grade 4, and does not add to explanation at grade 7. Instructional placement--assignment to learning assistance or ESL classes--contributes significantly to the explained variance at all grade levels. It is interesting to note that this set of variables makes a greater contribution to the grade 10 analysis for open-ended responses than it did in previous analyses of the multiple-choice achievement surveys; the reverse is true at grades 4 and 7. The contributions of the individual variables assigned to the instructional set were examined to determine their relative effects: at grade 4, only learning assistance entered the equation, contributing the entire 7.8% of the variance shown for the set; at grade 7, learning assistance contributed 3.4% of the variance, while current ESL assignment contributed a further 1.6%; at grade 10, learning assistance contributed 4.8% of the variance and combined (current and previous) ESL assignment a further 1.6%. For both grades 7 and 10, then, assignment to second language instruction is--not surprisingly--a stronger predictor of extended than fixed-response performance. At grade 7, gender appears to be more strongly associated with competence as measured by extended responses than by fixed responses; the same is true of postsecondary aspirations at grade 10. The contribution of self-reported leisure behaviour is generally consistent across response-modes.

It should be kept in mind that the sample of students which provided responses to Form Q may not fairly represent the distribution of abilities across the province, particularly at grade 7 (see Chapter 5 for a discussion of sample bias). If "good" students were systematically selected to respond to Form Q in some classrooms, low scores on these items may have been underrepresented in the factor score distributions. Consequently, results related to Form Q should be viewed with some caution; where these results diverge substantially from those reported for the achievement surveys, they sould be considered to indicate directions for further research rather than for changes in classroom practice.

6.5.4 Prediction of Attitudes: the Estes Reading Attitude Scale

The final series of regression analyses examined the contribution of background variables to variance in scores on the Estes Reading Attitude Scale (ERAS) using the same a priori model described earlier. Results are summarized in Table 6.17, which presents the combined contribution of variables entered at each of seven steps in regression analyses which employed a forward solution. Results are based on a sample of approximately 900 student responses to the Form R booklet at each grade level.

As shown in Table 6.17, the full model accounts for approximately 20% of the total variance at grade 4; 37% at grade 7; and 46% at grade 10. That is, given the same set of predictors and the same outcome measure, the proportion of explained variance nearly doubles between grades 4 and 7. This dramatic increase is largely due to a comparable increase in the proportion of variance explained by the set of background questions which related to students' leisure behaviour. The remaining discrepancy between grade 4 and 7 can be explained in terms of an increase in the variance explained by gender. At grade 10, gender explains even more of the variance in ERAS scores, while the contribution of leisure behaviour is equivalent to that shown for grade 7. However, sociocultural background--particularly number of books in the home--explains an increasing proportion of the variance.

Data presented in Table 6.17, then, suggest that during the intermediate grades, the Estes scale increasingly reflects leisure reading behaviour. This behaviour tends to be much more positive for girls than for boys. These patterns are relatively stable through the junior secondary grades; however, during early adolescence, the effects of home background appear to be intensified. These findings suggest that increased attention must be focused on the reading attitudes and behaviours of boys during the intermediate grades; and that, further, secondary schools must make determined efforts to overcome the sociocultural handicaps many of their students face.

Table 6.17
Summary: Prediction of Estes Reading Attitude Scale Scores at Grades 4, 7, and 10

Step	Variable set	Increase in R-squared		
		Grade 4	Grade 7	Grade 10
1	Gender	.015	.057	.072
2	Language background	none	none	none
3	Sociocultural background	.016	.013	.071
	(parental education)	(n/a)	(n/a)	(.017)
	(books in home)	(.016)	(.013)	(.054)
4	Instructional placement	.018	.005	.005
5	Leisure behaviour	.146	.289	.283
6	Future plans (Gr. 10 only)	n/a	n/a	.021
	Full model	.195	.371	.455
	(df)	(7, 889)	(8, 885)	(12, 853)

6.6 Summary

Analyses reported in this chapter indicate strong patterns of association among achievement scores, affective scales, background characteristics, and leisure behaviour.

6.6.1 Consistent Associations across Grade Levels

Many of the relationships examined were consistent across grade levels; that is, patterns which appeared in the grade 4 results were replicated at grades 7 and 10. These relationships included:

- Strong associations among domain-level scores, particularly those associated with comprehension. This result is congruent with that reported by Tuinman and Kendall (1980) who concluded that the 1980 assessment items, regardless of specific objective or domain assignment, measured, to a large extent, a general reading skill.
- Positive associations among subscales which measured perceived value of reading for four different purposes.

- Positive associations among reported enjoyment of periodicals, fiction/literary materials, and nonfiction; negligible associations between reported enjoyment of comic books and of other materials.

- Strong positive associations between Estes Reading Attitude Scale scores and achievement.

- Positive associations of achievement scores with perceived value of reading to obtain pleasure and with reported enjoyment of fiction. No association between achievement and reported enjoyment of comic books.

- Significant differences in achievement scores favouring girls, students for whom English is a first or dominant language, students who have extensive reading materials in their homes, and those who have not been selected to receive instructional assistance.

- Strong differences in achievement favouring students who reported high levels of involvement in leisure reading.

- Substantial differences in attitude scores favouring girls, students with extensive reading materials in their homes, and those reporting extensive involvement in leisure reading.

A series of multiple regression analyses employed an a priori model to examine associations among the set of background characteristics and achievement and attitude scores. Results which appeared consistently across grade levels included:

- Gender, language background, and reading materials in the home made significant contributions to the explained variance in achievement survey scores.

- When the effects of gender, language background, and home reading materials were controlled, current assignment to learning assistance was strongly associated with lower achievement scores.

- Involvement in leisure reading activities was positively associated with achievement scores; this relationship was largely unaffected by other student background characteristics.

- Addition of ERAS scores as a predictor added substantially to explanation of achievement scores; VRS scores also improved prediction, but to a much lesser extent.

- Language background did not add to prediction of ERAS scores; assignment to learning assistance made only a small contribution.

6.6.2 Differences in Relationships across Grade Levels

A number of differences in patterns of association were attributable to grade-level. Such patterns are of particular interest to researchers interested in the development of language-related skills and attitudes and to educators who are responsible for the articulation of curricula and materials for different grade levels.

Differential relationships across grade levels included:

- An increasingly articulated pattern of associations among perceived value of reading for various purposes, and among reported enjoyment of various materials. That is, grade 4 students tended to display more global attitudes and levels of enjoyment while their older counterparts made increasingly stronger distinctions among different purposes for reading and different types of material.

- An increasingly strong association between reported enjoyment of fiction/literary materials and student achievement.

- Substantially increased effects of home reading materials on achievement and attitude with increased levels of schooling.

- A substantial increase in gender effects on performance on Form Q items between grades 4 and 7. At grade 4, performance levels of girls and boys were comparable; at grade 7, girls enjoyed a substantial advantage.

The multiple regression analyses described in the final sections of this chapter also indicated a number of differences by grade level. These included:

- The contribution of ERAS scores to prediction of achievement scores decreased substantially between grades 4 and 7.

- Contributions of the Reading Enjoyment subscales increased substantially between grades 4 and 7.

- Contributions of the Value of Reading subscales--notably reading for pleasure--increased steadily with increasing grade level.

- The proportion of variance in ERAS scores which is explained by the set of background and leisure behaviour variables increased from 20% at grade 4 to 37% at grade 7, and 46% at grade 10. These increases are largely due to increases in the effects of gender, books in the home, and leisure behaviour. The differences due to gender increase with grade level and consistently favour girls. When the effects of gender are controlled, student ERAS scores are increasingly reflected in leisure behaviour patterns during the intermediate grades.

6.6.3 Future plans: Grade 10

Postsecondary aspirations of grade 10 students are strongly associated with achievement. Further, this association is relatively unaffected by other background variables or by attitude. When background characteristics, attitude scores, and leisure behaviour are controlled, postsecondary plans explain between 5% and 8% of the variance in achievement survey scores, and 10% of the variance in Form Q scores.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 Overview

This chapter provides a brief overview of results of the 1984 Reading Assessment, along with recommendations derived from these results. Additional suggestions made by teachers who participated in the assessment may be found in Appendix B.

7.2 Achievement Objectives

The achievement surveys occupy a major role in B.C. Assessment programs. In the 1984 Reading Assessment, the traditional multiple-choice surveys were accompanied by a set of open-ended questions. Conclusions and recommendations related to overall student achievement are outlined below.

7.2.1 Conclusions

Interpretation Panels at all grade levels consistently judged performance to be Satisfactory or Very Satisfactory for each achievement domain. Clearly, the current student population is meeting the "widely held expectations" for reading performance. Performance of grade 4 students continues to be particularly encouraging; as the Interpretation Panel noted, the apparent program strengths offer a sound basis for a move toward excellence. Typically, students' difficulties at grade 4 reflected inexperience in dealing with tasks required. Thus, grade 4 students were more likely than their older counterparts to choose "I don't know" even when key words such as "most likely" were provided. Grade 4 students also performed well on open-ended questions, although they had difficulty substantiating their responses to questions dealing with character and with personal evaluation of a poem. These results support the contention of the Interpretation Panel that a continued strong effort be directed toward the development of higher-level comprehension skills.

The grade 7 achievement results, as well, offer only isolated causes for concern. Overall, Interpretation Panelists were encouraged by the results, particularly in the areas of literal comprehension, locating and using information, and understanding words and expressions. Areas of concern included recognition of sequence, and discrimination between fact and opinion. Most grade 7 students also performed relatively well on the open-ended questions; however, like their counterparts at grade 4, many students experienced difficulty in substantiating inferential and evaluative responses. A strong focus on higher-level comprehension skills, and on strategies for dealing with a variety of question formats is clearly indicated.

Overall, the Interpretation Panelists expressed satisfaction with grade 10 achievement results; they were particularly encouraged by student performance in the areas of literal comprehension, inferential comprehension, locating information, and interpreting graphics. The grade 10 results for many of the critical comprehension items, however, were of some concern. Many students are apparently unaware of the intentions of the author, and fail to recognize even rather obvious cues and techniques in persuasive material. This problem was particularly evident in responses to the open-ended questions, where student performance was relatively weak on an item which required that they infer an author's point-of-view, and substantiate their inferences. Grade 10 student performance was also relatively weak on open-ended questions associated with a poem. Given the increasing demands these students must face as they proceed to higher grade levels, it seems imperative that they develop a repertoire of skills which include facility in making critical and evaluative responses.

The analysis of changes in performance level is traditionally a major agenda of the assessment program. In this assessment, a clear basis for comparison existed only at grade 4, where results indicated relative stability in both student performance and Interpretation Panel standards over the past four years.

7.2.2 Recommendations

In the light of the results and conclusions presented above, it is recommended that:

1. Teachers at all grade levels focus attention on inferential and critical reading skills, and that students be required both to make inferences/judgements and to substantiate them;

2. Teachers systematically instruct students in appropriate skills and strategies for dealing with both open-ended and fixed response questions; and

3. The Ministry, in cooperation with local districts, ensure that adequate instructional resources are made available to facilitate (1) and (2) above.

7.3 Attitudes and Behaviour

Affective outcomes were of primary interest at all grades; as well, extensive data were collected to describe student leisure reading habits. Conclusions and recommendations derived from results of the affective scales and background questionnaires are presented below.

7.3.1 Conclusions

Overall, students displayed very positive attitudes toward reading, reported a high level of enjoyment for reading fiction, and assigned high values to reading as a means of acquiring information and enhancing school achievement, particularly in Language Arts/English. There were, however, some disturbing trends in the data: older students were less likely to perceive independent reading as a means of enhancing school achievement; students at all grades assigned relatively low values to reading as a means of understanding one's self or others; grade 4 boys rated comic books as more enjoyable than any other materials, although overall, grade 4 students more often reported reading fiction; and library use declined sharply between grades 7 and 10.

A series of questions about school-related materials were of particular interest, and produced some startling results. Students were asked to rate five types of material, or, where applicable, to indicate that they did not use such material in school. Overall, ratings declined as grade level increased. At all grades, novels received the highest ratings; at grades 4 and 10, they were followed by readers/short stories, and poetry. At grade 7, however, poetry received the lowest rating, following social studies and science. Further, more than 17% of grade 7 students indicated that they did not read poetry in school--far more than the 11% at grade 10, and 8% at grade 4, which are also undesirably high. This may well explain the deficiencies described earlier in grade 10 performance on the open-ended items associated with a poem. Finally, it should be noted that grade 10 social studies textbooks received the most negative rating of any type of material at any grade level.

7.3.2 Recommendations

In the light of results summarized above, it is recommended that:

4. Local school districts, with the assistance of the Ministry of Education, ensure that a range of recreational reading material reflecting student interests and ability, as well as the range of content areas is available to every B.C. student;

5. Further, that teachers of all subject areas, working with librarians or other resource people, systematically draw student attention to publications--particularly recent releases--which fall within that domain content;

6. Secondary school teachers, librarians, and administrators examine patterns of library use, and develop strategies to enhance library use among secondary school students, many of whom were avid library users in elementary school;

7. English/Language Arts teachers maintain an awareness of current popular fiction, nonfiction, and periodicals in order to encourage and to facilitate classroom discussion about student recreational reading;

8. **Local districts and schools examine intermediate and junior secondary language arts courses to ensure that a variety of literary genres--including poetry--are represented, and read in every classroom.**

7.4 Associations Among Background and Outcome Variables

Results described in the preceding sections relate to the total B.C. school population. Performance of identifiable subgroups of students is also of major interest in developing and maintaining optimal programs. Conclusions and recommendations which derive from the performance of subpopulations are described below.

7.4.1 Conclusions

Although, overall, results indicate that most B.C. students performed well on the tasks presented by this assessment, it should be emphasized that, in every grade, many students were unable to deal effectively with the materials presented. It is important that salient characteristics of these students be identified, in order to facilitate the development and maintenance of compensatory strategies and programs. Generally, students who attained higher performance levels tended to be from homes where English is the dominant language, and where relatively large numbers of books are evident. These students watch less television, spend more time reading, borrow more library books, display more positive attitudes toward reading--particularly as a means of deriving pleasure and enhancing understanding--and are more likely to have high postsecondary aspirations. Girls attained higher achievement levels and displayed more positive attitudes than boys at all grade levels. For achievement, gender differences were most apparent at grade 7, particularly for open-ended items; for attitude, gender differences were greatest at grade 10. At all grade levels, boys displayed greater variation in the types of reading material they preferred. They displayed stronger interest in nonfiction, periodicals, and comic books than did their female counterparts, but less interest in fiction. A greater variety of reading resources--particularly in content areas--may be required to foster increased reading among male students.

Regarding student background, it is discouraging to note that effects of socio-cultural differences increase with grade level. Clearly, schools are currently unable to compensate for the educational handicaps many students face. At all grades, students who have few books in their homes perform poorly when compared to the total population. The differences for both achievement and attitude become dramatic at grade 10. Effects of dominant home language on achievement are also greatest at grade 10, although associations with attitude are negligible.

Finally, reading achievement and reading attitude exert a strong influence on student aspirations. Those students who have, by the end of grade 10, rejected postsecondary education in favour of direct entry to the workforce, have extremely low levels of achievement and of attitude toward reading, when compared with other students.

7.4.2 Recommendations

Given the results and conclusions presented above, it is recommended that:

9. Teachers of all subject areas direct special efforts toward fostering positive attitudes and increased reading among boys in the intermediate and secondary grades. The diversity of reading interests among these students must be recognized; the traditional emphasis on the novel as the basic recreational reading genre may be inappropriate for many of these students who display strong interest in nonfiction and periodicals;

10. Teacher training institutions ensure that pre-service methodology courses in all subject areas include specific instruction related to the recognition of reading problems, the selection of appropriate materials, the development of subject-specific reading skills, and the establishment/extension of supplemental reading materials; and

11. Local districts direct continued attention and resources toward those students who must overcome language, socio-cultural or other special problems in order to develop reading competence.

7.5 The Use of Assessment Results and Resources

The 1984 Reading Assessment is the first to provide school-level results. While many districts expressed keen interest in this innovation, such reports must be used with extreme care. Further, the decision to allow districts to retain the assessment instruments places the Ministry under an obligation to ensure their appropriate use. Finally, results of this assessment are ultimately of greatest relevance to classroom teachers; thus, it is important that their access to the information developed be facilitated.

In view of these concerns, it is recommended that:

12. School-level results be used to identify exemplary reading programs, and that these be analyzed to identify salient characteristics;

13. School-level results be interpreted with reference to known characteristics of the relevant student population, and the relationships between background characteristics and student outcomes which have been described in this report;

14. The Ministry provide guidelines for future district or school use of the 1984 achievement surveys; and

15. Teachers and district personnel be systematically directed to those sections of the General Report which have relevance to their current responsibilities. Districts may be well-advised to reproduce and circulate selected sections of the General Report to appropriate groups of classroom teachers.

7.6 The Specification of Reading Outcomes

The execution of a province-wide assessment is particularly complex in an area, such as reading, which is pervasive across the curriculum. In the process of completing this assessment, a number of areas of concern have arisen regarding organization of current curricula. For example, Language Arts, Science, and Social Studies curricula all include goals and objectives related to reading. Unfortunately, these are not always congruent within a grade level. Further, at the elementary level, the concept of integration is espoused, but not operationally defined. At the secondary level, it seems apparent that differing expectations will be held for students according to which grade 11 and 12 programs they select. Clearly, a curriculum prepared in 1980 cannot address this issue or provide guidance to teachers responsible for preparing these students.

In the light of these observations, it is recommended that:

16. The Ministry of Education review the elementary language arts guide, to ensure that the concept of integration is operationally defined; the nature of student reading experiences is made explicit (in view of the high proportion of students who report that they do not read poetry in school); and the language arts objectives specified in Social Studies and Science curriculum guides are addressed;

17. The Ministry review and revise the scope-and-sequence chart for Secondary English in the light of expections faced by current students across all curriculum areas. Further, if students are to be systematically streamed into alternate English courses in Senior Secondary grades, entry-level competencies required for various grade 11 courses be made explicit; and

18. The Ministry provide resources designed to assist Language Arts and content area teachers in diagnosing student needs and assessing student competence in reading both literary and content area materials.

7.7 Assessment of Student Competence

The following recommendations derive from procedures and results presented throughout this report. Regarding the measurement of student competence in reading, it is recommended that:

19. Reading assessments continue to focus on outcomes--as opposed to enabling skills--through the selection of realistic materials and tasks;

20. The Ministry re-iterate the assessment program schedule and purposes to facilitate planning and effective use of results by districts and schools;

21. The use of "I don't know" as an option on reading surveys be reconsidered in view of the absence of "content" and the need for students to use deductive strategies to obtain meaning;

22. Response formats be varied according to the objectives of primary interest; where these include organization, synthesis, or evaluation of materials, some provision for extended or open-ended responses is required; and

23. Future reading assessments maintain a strong focus on student reading attitudes and behaviours to enable examination of program effects. This information is of particular value to schools which are making sustained efforts to promote positive attitudes and enhance recreational reading.

7.8 Further Research

The following recommendations are directed to those responsible for designing, managing, and executing applied research involving language skills:

It is recommended that:

24. Research attention be directed to the development of student beliefs and perceptions about the value of reading;

25. Research attention be further directed to interactions between stimulus material, and student comprehension; and

26. Data from this assessment be further analyzed to simultaneously examine the effects of student, school, and district characteristics on student achievement and affective outcomes.

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APPENDIX A

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Maureen Neuman	North Vancouver School District
Lloyd Ollila	University of Victoria
Claire Penner	Surrey School District
Ralph Rambow	Courtenay School District
Roy Stewart	Trustee, Prince George School District
Caren Stone	Sooke School District
Merle Volway	Nechako School District

Grade 10

Sheila Best	Stikine School District
Einar Blix	Trustee, Kitimat School District
Richard Brett	Golden School District
Howard Bright	Peace River North School District
Carolyn Burr	B.C. Home and School Federation
Thea de Loi	Keremeos School District
Rod Derksen	Central Okanagan School District
Dan Derpak	Coquitlam School District
Virginia Douglas	Sunshine Coast School District
Paul Gotro	Quesnel School District
Lloyd Hamilton	Fernie School District
Wendy Herbert	Prince George School District
Hal La Favor	Vancouver School District
Sharon Lee	Surrey School District
Len Lendvoy	Delta School District
Rob Livingston	Burns Lake School District
Jennifer Lock	Nechako School District
Sally Mennell	Trustee, Keremeos School District
Kathryn Moffat	Trustee, Quesnel School District
Lyn Newberry	Terrace School District
Loretta Nichols	Parent, Qualicum School District
Marlene Recchi	Victoria School District
Don Rivers	Cranbrook School District
Mary Ann Robertson	Parent, Cariboo-Chilcotin S.D.
Constance Rulka	Howe Sound School District
Sharon Smith	South Cariboo School District
Don Sloan	Summerland School District
Paula Walden	Trustee, Delta School District
Rob Wilson	Lake Cowichan School District
Tannis Winston	Kettle Valley School District

APPENDIX B

Factor Loadings:

Value of Reading Scale
Reading Enjoyment Scale

Summary: Factor Loadings for Value of Reading Scale (Form S): Grade 4

Item No.	Factor 1	Factor 2	Factor 3
1	--	--	.59
2	--	.75	--
3	.53	--	--
4	--	--	.82
5	.68	--	--
6	.57	--	--
7	--	.69	--
8	--	.67	--
9	.56	--	--
10	.61	--	--

Note: Factor loadings less than .40 are not reported.

Summary: Factor Loadings for Value of Reading Scale (Form S): Grade 7

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
1	--	.54	--	.48
2	.78	--	--	--
3	--	.49	--	.42
4	--	--	--	.77
5	--	.77	--	--
6	--	.63	--	--
7	.76	--	--	--
8	.70	--	--	--
9	--	--	.85	--
10	--	--	.81	--

Note: Factor Loadings less than .40 are not reported.

Summary: Factor Loadings for Value of Reading Scale (Form S): Grade 10

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
1	--	--	.82	--
2	.82	--	--	--
3	--	--	--	.48
4	--	.44	.52	--
5	--	--	.59	.49
6	--	--	--	.81
7	.81	--	--	--
8	.74	--	--	--
9	--	.88	--	--
10	--	.86	--	--

Note: Factor loadings less than .40 are not reported.

Summary: Factor Loadings for Reading Enjoyment Scale (Form T): Grade 4

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
1	.63	--	--	--
2	--	.46	--	--
3	--	--	--	.92
4	--	.72	--	--
5	.59	--	--	--
6	--	.59	--	--
7	--	.45	--	--
8	--	.54	.41	--
9	--	--	.73	--
10	--	--	.57	--
11	.52	--	.51	--
12	.43	--	.53	--

Note: Factor loadings less than .40 are not reported.

Summary: Factor Loadings for
Reading Enjoyment Scale (Form T): Grade 7

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
1	--	--	.72	--
2	--	--	.61	--
3	--	--	--	.90
4	.67	--	--	--
5	--	.63	--	--
6	.44	--	--	--
7	--	.48	.46	--
8	.74	--	--	--
9	.56	--	--	--
10	.57	--	--	--
11	--	.75	--	--
12	--	.66	--	--

Note: Factor loadings less than .40 are not reported.

Summary: Factor Loadings for
Reading Enjoyment Scale (Form T): Grade 10

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
1	--	--	.74	--
2	--	--	.66	--
3	--	--	--	.87
4	.66	--	--	--
5	--	.63	--	--
6	.44	--	.42	-.42
7	--	.50	--	--
8	.72	--	--	--
9	.73	--	--	--
10	.64	--	--	--
11	--	.77	--	--
12	--	.68	--	--

Note: Factor loadings less than .40 are not reported.

APPENDIX C

Background Questionnaire:

Response Distributions by Grade Level

BACKGROUND INFORMATION

	Percent of Students		
	Grade 4	Grade 7	Grade 10
Gender			
Male	50.4	50.9	49.6
Female	49.6	49.1	50.4
1. How many students attend your school?			
1. Less than 50	1.1	0.5	-
2. 50 to 149	8.4	6.4	-
3. 150 to 249	22.5	18.9	-
4. 250 to 399	40.6	40.7	-
5. 400 to 599	25.3	30.0	-
6. 600 or more	2.2	3.6	-
(Grade 10 Only)			
1. Less than 150	-	-	1.2
2. 150 to 299	-	-	3.4
3. 300 to 449	-	-	9.1
4. 450 to 599	-	-	22.4
5. 600 to 999	-	-	41.0
6. 1000 or more	-	-	22.9
2. How many students are in your classroom?			
1. 0 to 15	1.1	0.9	5.6
2. 16 to 20	6.1	5.0	12.2
3. 21 to 25	36.1	25.2	26.7
4. 26 to 30	46.5	51.3	42.9
5. 31 to 35	9.6	16.8	12.1
6. 36 or over	0.7	0.8	0.5

	Percent of Students		
	Grade 4	Grade 7	Grade 10
3. Students in my class are in grade(s):			
1. Grade 1	0.5	0.3	-
2. Grade 2	0.6	0.2	-
3. Grade 3	15.3	0.3	-
4. Grade 4	100.0	0.3	-
5. Grade 5	18.6	1.1	-
6. Grade 6	0.9	16.7	-
7. Grade 7	0.4	99.4	-
8. Grade 8	0.0	0.2	-
9. Grade 9	0.0	0.1	-
10. Grade 10	0.0	0.0	-
4. My class is a ...			
1. Regular class.	96.7	97.9	98.1
2. French Immersion class.	2.6	1.6	1.0
3. "Programme-Cadre de Francais" class.	0.4	0.2	0.8
5. Do you sometimes go to learning assistance for special help?			
1. Yes	81.7	10.8	8.5
2. No	18.2	89.0	91.1
6. Do you sometimes attend English as a Second Language (ESL) classes?			
1. Yes	3.1	2.4	2.9
2. No	96.8	97.5	96.8
7. Have you ever attended English as a Second Language (ESL) classes?			
1. Yes	6.8	6.2	6.9
2. No	93.1	93.7	92.6

	Percent of Students		
	Grade 4	Grade 7	Grade 10
8. What language did you use when you first learned to speak?			
1. English	85.5	86.5	84.4
2. Another language	14.4	13.4	15.5
9. What language do you now speak most often at home?			
1. English	91.1	92.7	92.6
2. Another language	8.5	6.9	7.0
10. About how many hours of television did you watch yesterday?			
1. None	16.3	11.8	14.8
2. Less than one hour	16.1	12.8	14.2
3. About one hour	15.7	14.8	14.8
4. About two hours	17.1	21.4	23.3
5. About three hours	12.0	17.1	17.0
6. About four hours	7.4	9.1	8.1
7. Four hours or more	15.2	13.0	7.8
11. About how many books are there in your home?			
1. 0 to 9	2.2	1.3	1.4
2. 10 to 24	6.7	4.5	3.9
3. 25 to 99	20.0	19.0	19.0
4. 100 to 249	25.5	29.4	29.4
5. 250 to 499	19.8	24.0	23.7
6. 500 or more	25.4	21.7	22.5

12. What reader are you using now?

		Percent of Students		
		Grade 4	Grade 7	Grade 10
	Ginn			
1.	Inside Out	9.5	–	–
2.	A Lizard to Start With	56.2	–	–
3.	Tell Me How the Sun Rose	8.5	–	–
	Holt, Rinehart & Winston			
4.	Ready or Not	11.5	–	–
	Nelson			
5.	Backpacks & Bumblebees	1.4	–	–
6.	Rowboats & Roller Skates	1.4	–	–
7.	Driftwood & Dandelions	0.5	–	–
	Gage			
8.	People Like Me	0.9	–	–
9.	Other	10.8	–	–
10.	I'm not using a reader	5.7	–	–
	Ginn			
1.	Measure Me, Sky	–	4.7	–
2.	Mountains Are for Climbing	–	39.0	–
3.	To Make a Difference	–	19.8	–
	Holt, Rinehart & Winston			
4.	Inside, Outside	–	14.2	–
	Nelson			
5.	Sleeping Bags & Flying Machines	–	0.6	–
6.	Toboggans & Turtlenecks	–	0.5	–
	Gage			
7.	Strategies for Effective Reading	–	1.5	–
	Copp Clark			
8.	Sense and Feeling	–	27.1	–
9.	Other	–	13.6	–
10.	I'm not using a reader	–	7.0	–

	Percent of Students		
	Grade 4	Grade 7	Grade 10
13. Suppose you had several hours of free time. Which one of the following would you most likely do?			
1. Watch TV	21.5	23.2	23.1
2. Go to a movie	18.7	10.1	10.4
3. Play a game or sport	42.8	48.6	46.9
4. Read a book or story	15.5	15.7	15.6
5. Read a magazine	1.4	2.2	3.9
14. Suppose you had several hours of free time. Which one of the following would you least likely do?			
1. Watch TV	15.9	10.3	10.9
2. Go to a movie	23.0	30.8	28.4
3. Play a game or sport	8.6	6.4	9.9
4. Read a book or story	16.8	27.1	34.8
5. Read a magazine	35.5	25.4	15.9
15. How much time did you spend reading yesterday? (If you were at school yesterday, count only your time outside school. Don't count your homework.)			
1. None at all	32.8	23.8	26.1
2. Less than half an hour	26.3	26.3	28.0
3. Half an hour to one hour	23.8	29.1	27.1
4. Between one and two hours	10.1	14.0	13.1
5. More than two hours	7.0	6.6	5.6
16. If you read yesterday, what were you reading? (You may fill in more than one bubble for this answer.)			
1. Storybook	47.8	-	-
2. Newspaper	10.9	-	-
3. Magazine	12.2	-	-
4. Comic Book	26.4	-	-
5. I didn't read yesterday	31.1	-	-

	Percent of Students		
	Grade 4	Grade 7	Grade 10
If you read yesterday, what were you reading? (You may fill in more than one bubble for this answer.)			
1. Novel	-	43.8	36.7
2. Newspaper	-	17.8	26.3
3. Magazine	-	22.6	31.4
4. Comic book	-	17.3	6.4
5. Non-fiction	-	14.3	11.2
6. I didn't read yesterday	-	21.9	24.8
17. About how many library books did you borrow last month? (Count all the books you borrowed, whether from the school library or a public library.)			
1. None	5.7	9.1	30.1
2. One or two	14.8	18.6	29.0
3. Three to five	20.5	29.6	23.8
4. Six to ten	24.0	22.1	10.3
5. More than ten	34.4	20.2	6.5
18. About how many days of school have you missed since Christmas?			
1. None	21.8	20.2	15.4
2. One or two	31.1	30.8	28.8
3. Three to five	24.1	26.7	28.2
4. Six to ten	13.1	13.7	15.6
5. More than ten	9.7	8.5	12.0
19. Do you receive any instruction in reading in your English class?			
1. Yes	-	-	43.1
2. No	-	-	56.3

	Percent of Students		
	Grade 4	Grade 7	Grade 10
20. What do you plan to do after finishing high school? (Mark one choice only.)			
1. Attend a technical institute	-	-	9.6
2. Attend a community college	-	-	14.6
3. Attend a university	-	-	36.2
4. Attend a business school	-	-	3.7
5. Look for a job	-	-	8.8
6. I don't plan to finish high school	-	-	0.7
7. Other plans	-	-	8.5
8. Undecided	-	-	17.8
21. What is the highest level of education completed by your mother or female guardian?			
1. Did not finish high school	-	-	27.4
2. Finished high school	-	-	35.0
3. Vocational or technical training	-	-	15.6
4. Some university	-	-	9.3
5. Finished a university degree	-	-	12.5
22. What is the highest level of education completed by your father or male guardian?			
1. Did not finish high school	-	-	31.4
2. Finished high school	-	-	23.8
3. Vocational or technical training	-	-	19.7
4. Some university	-	-	7.7
5. Finished a university degree	-	-	17.3

APPENDIX D

Affective Scales with Response Distributions by Grade Level

1. Estes Reading Attitude Scale
2. Value of Reading Scale
3. Reading Enjoyment Scale

Form R: Estes Reading Attitude Survey

	Grade	Percent of Students Strongly Agree	Agree	Can't Decide	Disagree	Strongly Disagree
1. Reading is for learning but not for enjoyment.	Grade 4	9.1	17.1	17.1	35.5	21.1
	Grade 7	2.6	8.8	8.8	48.9	30.8
	Grade 10	1.9	6.3	5.8	53.5	32.5
2. Spending allowance on books is a waste of good money.	Grade 4	7.3	13.1	18.8	38.8	22.0
	Grade 7	5.1	10.4	16.5	50.3	17.6
	Grade 10	6.8	14.4	13.6	52.7	12.5
3. Reading is a good way to spend spare time.	Grade 4	34.9	47.2	8.6	6.3	3.1
	Grade 7	22.7	55.3	10.8	8.9	2.3
	Grade 10	15.1	56.9	12.0	12.6	3.4
4. Books are a bore.	Grade 4	4.1	5.2	12.1	39.1	39.4
	Grade 7	3.0	6.0	12.7	45.6	32.8
	Grade 10	4.2	8.5	12.4	48.5	26.4
5. Watching TV is better than reading.	Grade 4	13.4	15.8	26.2	27.0	17.5
	Grade 7	10.8	21.3	33.6	26.6	7.7
	Grade 10	10.3	25.2	30.4	28.0	6.0
6. Reading is rewarding to me.	Grade 4	18.3	35.4	26.0	14.4	5.9
	Grade 7	14.2	41.3	23.5	16.2	4.8
	Grade 10	15.4	46.9	18.6	14.7	4.4
7. Books aren't usually good enough to finish.	Grade 4	5.2	13.6	16.5	39.9	24.8
	Grade 7	3.8	12.7	14.7	48.0	20.9
	Grade 10	3.3	12.6	12.8	53.3	18.1
8. Reading becomes boring after about one hour.	Grade 4	13.5	29.4	15.1	26.7	15.2
	Grade 7	9.9	24.4	15.6	36.1	13.9
	Grade 10	8.9	21.5	14.3	43.0	12.3

Form R: Estes Reading Attitude Survey (Continued)

	Grade	Percent of Students				
		Strongly Agree	Agree	Can't Decide	Disagree	Strongly Disagree
9. Most books are too long and dull.	Grade 4	8.1	16.6	17.2	36.6	21.5
	Grade 7	6.3	16.3	16.0	44.0	17.0
	Grade 10	6.2	17.8	14.1	49.3	12.6
10. There are many books which I hope to read.	Grade 4	44.3	40.4	7.3	4.9	3.1
	Grade 7	33.0	45.5	9.9	8.8	3.0
	Grade 10	20.3	46.1	14.7	15.6	3.3
11. Books should only be read when they are assigned.	Grade 4	5.4	9.1	11.4	32.6	41.5
	Grade 7	2.6	4.0	4.2	39.5	49.8
	Grade 10	1.8	5.3	5.1	51.2	36.6
12. Reading is something I can do without.	Grade 4	6.6	14.2	15.6	30.4	33.2
	Grade 7	3.5	8.2	11.5	39.6	37.2
	Grade 10	3.1	10.5	10.8	44.3	31.3
13. Some part of summer vacation should be set aside for reading.	Grade 4	17.1	31.6	18.7	17.0	15.6
	Grade 7	11.4	36.7	20.8	18.8	12.4
	Grade 10	7.3	33.5	22.2	23.3	13.8
14. Books make good presents.	Grade 4	28.9	47.9	14.9	5.1	3.3
	Grade 7	15.7	51.8	19.9	9.5	3.1
	Grade 10	9.2	50.5	21.6	13.8	4.6
15. Reading is dull.	Grade 4	4.2	4.8	11.6	31.6	47.7
	Grade 7	3.6	6.5	12.7	39.3	38.0
	Grade 10	4.5	9.9	12.6	45.0	28.1

Form S: Value of Reading Scale

		Percent of Students				
	Grade	Very Useful	Quite Useful	Can't Decide	Not very Useful	Not at all Useful
HOW USEFUL IS READING FOR ...						
1. learning about famous people and important events?	Grade 4	33.9	38.0	19.2	6.8	0.5
	Grade 7	31.4	51.2	9.1	7.6	0.6
	Grade 10	33.7	48.7	7.7	8.8	1.1
2. helping you to understand more about the way you feel and act?	Grade 4	28.7	33.8	23.4	10.2	3.9
	Grade 7	23.8	33.2	10.5	10.0	4.5
	Grade 10	21.8	35.9	16.6	20.5	5.2
3. learning about what our world may be like in the future?	Grade 4	51.0	26.4	13.4	6.5	2.6
	Grade 7	43.1	34.8	11.4	9.1	1.6
	Grade 10	35.4	40.9	11.3	10.5	1.9
4. helping you to relax and enjoy your spare time?	Grade 4	35.3	33.1	13.6	12.4	2.6
	Grade 7	33.5	33.6	11.8	15.7	5.5
	Grade 10	33.6	34.5	10.5	14.9	6.5
5. learning about new discoveries and inventions?	Grade 4	43.1	32.7	14.1	7.0	3.1
	Grade 7	36.6	41.6	11.4	8.8	1.5
	Grade 10	36.3	44.0	10.7	7.7	1.3
6. helping you to make, fix or operate something?	Grade 4	40.0	33.7	14.9	7.9	3.5
	Grade 7	47.9	36.7	7.4	6.2	1.8
	Grade 10	50.7	37.3	5.6	5.3	1.1
7. helping you to understand more about how other people feel and act?	Grade 4	24.7	32.7	22.2	14.3	6.1
	Grade 7	16.3	33.2	21.4	22.3	6.8
	Grade 10	17.8	36.0	20.5	20.1	5.7
8. helping you to understand and solve problems when you have them?	Grade 4	47.5	28.2	11.7	8.7	4.0
	Grade 7	37.4	31.0	12.7	13.5	5.5
	Grade 10	25.3	34.2	15.0	18.8	6.7

Form S: Value of Reading Scale (Continued)

	Grade	Percent of Students Very Useful	Quite Useful	Can't Decide	Not very Useful	Not at all Useful
HOW USEFUL IS READING YOU CHOOSE FOR YOURSELF AND DO OUTSIDE OF SCHOOL HOURS, FOR						
9. helping you to improve the stories and reports you write?	Grade 4	52.7	28.4	11.1	5.2	2.6
	Grade 7	53.1	30.6	8.5	6.0	1.8
	Grade 10	36.7	38.0	11.3	11.1	2.9
10. helping you to get better marks in school?	Grade 4	67.0	19.8	7.0	3.7	2.5
	Grade 7	57.7	25.0	8.6	6.4	2.4
	Grade 10	37.3	33.8	12.7	12.2	3.9

Form T: Reading Enjoyment Scale

WHEN YOU CHOOSE THEM YOURSELF, HOW MUCH DO YOU LIKE TO READ ...	Grade	Like Them Very Much	Some-times Like Them	Can't Decide	Usually Don't Like Them	Never Read Them
1. magazines?	Grade 4	16.5	44.9	9.8	13.6	15.2
	Grade 7	27.4	57.5	3.9	7.6	3.6
	Grade 10	42.2	51.3	1.7	3.6	1.3
2. newspapers?	Grade 4	9.3	34.8	10.9	17.4	27.5
	Grade 7	11.3	53.1	9.0	16.9	9.8
	Grade 10	17.1	61.9	6.0	11.0	4.1
3. comic books or cartoon books?	Grade 4	61.1	25.7	5.1	4.2	3.9
	Grade 7	39.6	35.8	5.9	10.8	7.9
	Grade 10	18.6	36.2	7.0	18.1	20.1
4. short stories or novels (fiction)?	Grade 4	39.9	36.6	12.3	7.4	3.7
	Grade 7	47.2	36.5	6.9	7.6	1.9
	Grade 10	44.8	37.9	5.1	8.5	3.7
5. books that tell you how to make, fix or operate something?	Grade 4	25.3	28.1	13.5	13.2	19.9
	Grade 7	19.2	29.7	13.4	18.7	19.1
	Grade 10	18.3	30.8	13.4	18.7	18.9
6. true stories about people (bibliography)?	Grade 4	24.4	32.2	14.6	12.7	16.2
	Grade 7	20.3	36.6	13.4	16.9	12.1
	Grade 10	22.8	39.0	11.4	14.4	12.3
7. other books that give you facts and information (non-fiction)?	Grade 4	25.7	37.7	17.4	11.1	8.0
	Grade 7	19.8	45.0	17.2	13.7	4.4
	Grade 10	17.6	47.1	15.6	14.8	4.9

Form T: Reading Enjoyment Scale (Continued)

			Percent of Students				
		Grade	Like Them Very Much	Some-times Like Them	Can't Decide	Usually Don't Like Them	Don't Read ... in School/ No Text
HOW MUCH DO YOU LIKE TO READ ...							
8.	the novels you are given in school?	Grade 4	37.5	41.7	10.8	6.3	3.7
	... in school?	Grade 7	22.7	54.2	7.6	13.2	2.3
	... in English?	Grade 10	17.2	58.3	5.1	18.6	0.8
9.	the reader you use in school?	Grade 4	36.0	40.2	13.6	7.3	2.9
	... in school?	Grade 7	12.9	50.1	14.3	18.2	4.5
	the short stories you read in English?	Grade 10	13.5	56.4	10.4	16.4	3.2
10.	the poems you read in school?	Grade 4	27.9	38.1	16.1	10.3	7.7
		Grade 7	11.7	32.9	17.1	20.9	17.4
		Grade 10	10.9	32.1	15.6	30.9	10.6
11.	your science textbooks?	Grade 4	23.5	31.2	18.0	18.0	9.3
		Grade 7	17.6	36.0	17.2	22.6	6.5
		Grade 10	11.0	31.5	17.0	36.7	3.8
12.	your social studies textbooks?	Grade 4	21.0	23.8	14.0	12.0	29.3
		Grade 7	17.5	32.9	15.8	20.4	13.5
		Grade 10	7.9	33.5	16.2	38.1	4.3

APPENDIX E

Grade 4 Achievement Surveys

- Item/domain assignment and item response rates
- Form 4R: Item response distributions
- Form 4S: Item response distributions
- Form 4T: Item response distributions
- Form 4Q

GRADE 4 ACHIEVEMENT SURVEYS

The grade 4 achievement survey items are listed below by objective, within domain. The response rate--percent of students who selected a response option--is given for each item.

Following the list of items, the achievement surveys are presented. For Forms 4R, 4S, and 4T, response distributions--as percent of students who selected each option--are given to the left of the response options. The keyed response for each item is indicated by an asterisk. Form 4Q is presented without response distributions; these may be found in Chapter 5 where they are displayed as Figures 5.1 through 5.8.

Grade 4: Domain 1, Understands Words and Expressions

Word Recognition		Context Clues		Multiple Meanings		Structural Analysis	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
R04	99	R07	100	R01	100	R09	99
R05	100	R08	99	R02	100	R10	99
R06	99	S09	99	R03	99	S07	100
S04	100	S10	99	S01	100	S08	99
S05	99	T07	100	S02	100	T09	99
S06	99	T08	99	S03	100	T10	99
T01	100			T04	100		
T02	100			T05	100		
T03	100			T06	99		

Grade 4: Domain 2, Literal Comprehension

Main Ideas		Sequence		Relationships		Supporting Information	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
R21	98	R13	99	R11	99	R14	99
R22	98	R26	97	R24	97	R25	97
S12	99	R27	97	R28	96	S13	99
S22	99	S25	98	S28	97	S15	99
T13	99			S29	96	S24	98
T16	99			T11	99	S26	98
T17	99			T29	96	S27	97
T26	97					T19	99
T32	96					T30	96
						T31	96

Grade 4: Domain 3, Inferential/Critical Comprehension

Main Ideas

Item No.	Percent Response
R23	98
S14	99
S20	99
S23	98
T25	98
T27	97

Predictions/ Generalizations

Item No.	Percent Response
R16	99
R20	98
R29	95
R30	95
R31	95
S11	99
S21	99
S31	96
T12	99
T14	99
T15	99

Relationships

Item No.	Percent Response
R15	99
S16	99
T20	99
T28	97

Evaluates Material

Item No.	Percent Response
R12	99
R32	95
S30	96
S32	96
T18	99
T21	98

Grade 4: Domain 4, Locates/Uses Information

Locates information

Item No.	Percent Response
R33	94
R34	94
R35	93
R36	92
S33	95
S34	94
S35	94
S36	93
T33	96
T34	95
T35	95
T36	95

Uses information

Item No.	Percent Response
R17	99
R18	99
R19	98
S17	99
S19	99
T22	98
T23	98
T24	98

Interprets Pictures

Item No.	Percent Response
R37	92
R38	92
R39	92
R40	92
S37	93
S38	93
S39	92
S40	92
T37	95
T38	95
T39	94
T40	94

FORM 4R

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 10, CAREFULLY READ EACH SENTENCE. THEN, CHOOSE THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

R1. In many ways mammals are like birds.

In this sentence, like means ...

6 A. a habit of.
10 B. fond of.
6 C. suitable.
65 *D. similar to.
12 E. I don't know.

R2. He filed the important papers in his cabinet.

In this sentence, filed most likely means ...

83 *A. put away in order.
4 B. marched in a line.
2 C. smoothed with a tool.
6 D. poured.
5 E. I don't know.

R3. The robbers scaled the wall and got away.

In this sentence, the word scaled means ...

7 A. weighed.
80 *B. climbed over.
2 C. flaked the fish.
2 D. showed the size relationships.
8 E. I don't know.

R4. They watched the infant.

Infant means ...

4 A. cradle.
3 B. hen.
66 *C. baby.
4 D. candle.
22 E. I don't know.

R5. John noticed the black car.

Noticed means ...

2 A. stole.
92 *B. saw.
2 C. wanted.
3 D. looked for.
1 E. I don't know.

R6. She stopped in astonishment.

Astonishment means ...

13 A. amusement.
7 B. anger.
66 *C. surprise.
2 D. knowledge.
11 E. I don't know.

R7. Our soccer team isn't very good. In fact, until yesterday, they had lost every game. We were really surprised when they triumphed over Lake City last night.

When this team triumphed they ...

12 A. lost the game.
4 B. got into a fight.
68 *C. won the game.
6 D. tied the score.
9 E. I don't know.

R8. We were surprised to see them. We did not know they were in France; our meeting was fortuitous.

The word fortuitous most likely means ...

7 A. in a group of four.
14 B. in far places.
32 *C. accidental.
19 D. well-planned.
27 E. I don't know.

R9. The child was inactive.

Inactive means ...

61 *A. not moving.
6 B. moving again.
15 C. moving too much.
4 D. moving once.
13 E. I don't know.

R10. He was undefeated in the races.

Undefeated means ...

62 *A. not defeated.
5 B. defeated often.
4 C. defeated once.
18 D. very hard to defeat.
10 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 11 TO 16 USING INFORMATION FROM THIS PASSAGE.

THE BROKEN WINDOW MYSTERY

At the police station, Captain Lake and Jim Parker, a patrolman, listened to Mike's story.

"This boy named Ted came to see my sister," Mike told them. "He has been seeing my sister a lot, and I don't like it. He is bad; I know from seeing him around school. So today I told him not to come around my house again. He did not like it. He said that he would get me for it. Then a little while after he left, a rock came through the window. That is why I came to you."

"Where is the rock?" Lake asked.

"Right here." Mike said, reaching into his coat. "It is big. I could have been killed by it."

Lake looked at the rock. Then he sent Mike home, and he and Parker went to see Ted. They told him Mike's story.

Ted looked surprised. "I didn't do it." he said. "I know he doesn't like me, but I did not know that he would make up such a story to keep me away from his sister."

Parker said, "You are going down to the station. I think you did it."

"Not so fast." said Lake. "We are not sure that he did it. We might take a look at that window first."

GO TO THE NEXT PAGE.

They went to Mike's house and looked at the broken window. "Now are you sure, Captain?" asked Mike.

"Yes," Lake said. "Sure that you are the one who broke the window."

"Captain, what makes you think that?" Parker asked.

"Well, if Ted threw the rock, the broken glass would be inside the house." Lake said. "But here it is on the ground outside the house. Something thrown from inside the house broke the window. And that something was thrown by you, wasn't it, Mike?"

The sad look on Mike's face was enough of an answer for Lake and Parker.

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R11. How did Lake know that Ted had not thrown the rock?

4 A. Mike's fingerprints were on the rock.
4 B. Ted told a very good story.
81 *C. There was broken glass outside the house.
7 D. He knew Ted was honest.
3 E. I don't know.

R12. How do we know that Jim Parker, the patrolman, jumped to conclusions?

60 *A. He accused Ted of breaking the window before he knew all the facts.
4 B. He liked Mike.
7 C. He didn't trust young boys.
12 D. He was a patrolman and Captain Lake was his commanding officer.
16 E. I don't know.

R13. Which one of the following events happened first?

11 A. Captain Lake looked at the rock.
5 B. The police went to see Ted.
6 C. The police went to Mike's house.
75 *D. Mike went to the police station.
3 E. I don't know.

R14. Where was Mike when he told his story?

78 *A. at the police station
3 B. at school
11 C. at his home
6 D. at Ted's house
2 E. I don't know.

R15. How did the officers finally know that Mike broke the window?

79 *A. They saw the sad look on Mike's face.
8 B. They noticed that Mike was angry with Ted.
4 C. They heard Mike confess to his sister.
2 D. They asked Mike's mother for the truth.
6 E. I don't know.

R16. In this passage, Mike appears to be ...

7 A. reliable.
6 B. a bully.
4 C. a thief.
75 *D. a liar.
6 E. I don't know.

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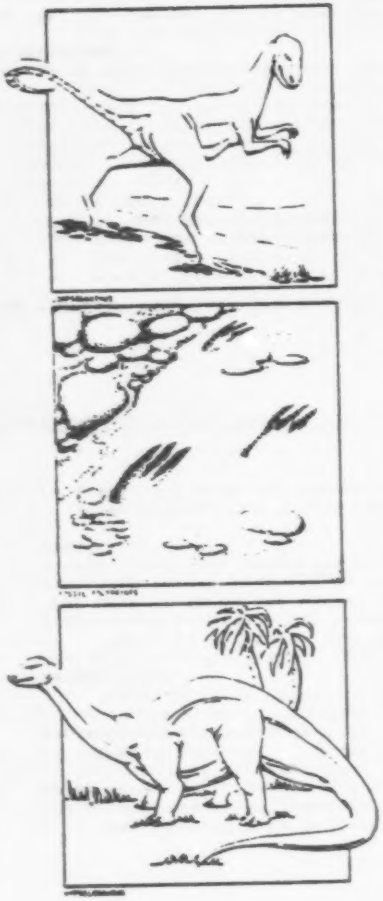
USE THE INFORMATION IN THE CHART BELOW TO ANSWER QUESTIONS 17 TO 19.

FOSSIL FACTS & MEANINGS



clutch of eggs A group of eggs laid together by an adult female dinosaur.

Compsognathus This little dinosaur was about the size of a chicken. Scientists are not sure whether it was a juvenile or a small adult.

fossil Any trace of ancient life such as bones, teeth or skin, or leaf impressions, footprints, eggs. Fossils were once buried by sand or mud and are now hardened like rock.

hadrosaur A family of dinosaurs that had duck-like bills. Most had crests on top of their heads.

hatchling dinosaur A dinosaur that had recently emerged from its egg.

Hypselosaurus
Hypselosaurus laid the largest dinosaur eggs that scientists have ever found.

juvenile dinosaur A young dinosaur that had not yet reached adult size.

R17. Which dinosaur was about the size of a chicken?

3 A. Hadrosaur
1 B. Brontosaurus
2 C. Hypselosaurus
90 *D. Compsognathus
3 E. I don't know.

R18. Which dinosaur laid the largest egg?

3 A. Tyrannosaurus Rex
2 B. Fossilosaurus
6 C. Juvenile Dinosaur
85 *D. Hypselosaurus
3 E. I don't know.

R19. What was a hatchling dinosaur?

13 A. a dinosaur egg
67 *B. a baby dinosaur
5 C. an adult dinosaur
4 D. a dinosaur about the size of a chicken
9 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 20 TO 23.

THE MOUSE

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor----

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

"The bread box is tin
And I cannot get in.

"The jam's in a jar
My teeth cannot mar.

"The cheese sits by itself
On the ice-box shelf.

"All night I run
Searching and seeking;
All night I run
About the floor.

"Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

-- Elizabeth Coatsworth

R20. How is the dance floor lit?

87 *A. by moonlight
3 B. by the slant on the floor
2 C. by the light of the ice-box
2 D. by a candle
3 E. I don't know.

R21. "Little I ask
And that little is not granted"

What do these lines mean?

58 *A. I don't even get the few things I ask for.
3 B. I always get what I want.
12 C. I want a lot but I only get a little.
14 D. If I don't ask for too much, my wish will be granted.
12 E. I don't know.

R22. What does the mouse do all night?

71 *A. looks for food
14 B. dances
7 C. eats bread and jam
3 D. looks for company
3 E. I don't know.

R23. What does the mouse want to do?

9 A. search for a crack of moonlight
2 B. chew on the table
14 C. dance on the bare floor
67 *D. eat a few leftover crumbs
6 E. I don't know.

USE THE INFORMATION IN THE RECIPE BELOW TO ANSWER QUESTIONS 24 TO 27.

GROW YOUR OWN SPROUTS

Ingredients: 45 mL alfalfa seeds or mung beans (mung beans turn into Chinese bean sprouts)

Utensils:
measuring spoons
1 L glass jar
cheesecloth or wire mesh
rubber band

1. Place the seeds in a jar. Fill the jar half full with water and let the seeds soak overnight.

2. Next day, cover the mouth of the jar with cheesecloth (or a piece of wire mesh) and secure it with the rubber band. (The cloth or mesh will keep the seeds from spilling out.) Put the jar in a dark cupboard or closet.

3. Twice a day, drain the seeds and rinse them with fresh water. After they are rinsed, shake the jar so that the seeds are clinging all around the inside, not in one clump. Drain and rinse twice a day for three days.

4. On the fourth day, or when the seeds have tails about 3 cm long, put the jar on a sunny window ledge. In a few hours the sprouts will turn green and should be about 4 cm in length. They are now ready to be eaten and should be stored in the refrigerator. (Mung beans take 2 to 3 days longer to sprout than alfalfa seeds.)

Eat them as a crunchy snack or in your
favourite salad or sandwich.

R24. Why do you cover the mouth of the jar with cheesecloth or wire mesh?

79 *A. to keep the seeds from spilling out
4 B. to keep the light out
3 C. to keep the seeds cold
7 D. to make them grow faster
4 E. I don't know.

R25. How often should you drain the seeds and rinse them with fresh water?

79 *A. twice a day
2 B. when you remember
10 C. once a day
4 D. once a week
2 E. I don't know.

R26. What is the last step in growing the sprouts?

76 *A. Put the jar on a sunny window ledge.
5 B. Shake the jar.
5 C. Soak the seeds overnight.
6 D. Rinse the seeds with fresh water.
5 E. I don't know.

R27. When are the alfalfa sprouts ready to be eaten?

9 A. when they are yellow and about 3 cm long
5 B. on the third day
74 *C. when they are green and about 4 cm long
3 D. twice a day
5 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 28 TO 32 USING INFORMATION FROM THIS PASSAGE.

NANUK

Nanuk liked this time of year. Now that she was 12 springs old, she could do many things to help. She was clever and strong, and she learned quickly. Nanuk already knew many of the ways of her people. She could make clothes and sew a boat cover. She could spear fish, drive a dog team and make a snug pack for travelling. It gave Nanuk a good feeling to do jobs that were important to her family.

The families travelled by boat along the seacoast and walked inland to their campsite. Everyone kept busy while waiting for the caribou to come. The men worked on their weapons. The women sewed and prepared food for their families. Whenever they had time, the women searched the hills for twigs from willow bushes. After the hunt they would build fires for melting caribou fat, an important food for their people.

Where Nanuk lived, there were no trees. Even plants grew very, very slowly. So finding wood for fires was not easy. The women searched everywhere, including the river. Sometimes they were lucky enough to find driftwood that had been carried downstream. Even small pieces were useful.

-- Heather Smith Siska

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R28. Why was it difficult to find wood for fires?

75 *A. There were no trees.
5 B. They had no axes.
5 C. They didn't know where to look.
6 D. The land was covered with snow.
5 E. I don't know.

R29. In this passage, what did Nanuk do to help her family?

9 A. worked on weapons
7 B. grew plants
59 *C. made packs for travelling
11 D. hunted caribou
9 E. I don't know.

R30. From reading this story, what do you learn about Nanuk?

6 A. Nanuk was the oldest in her family.
5 B. Nanuk was not as smart as other girls.
3 C. Nanuk was a very lazy person.
77 *D. Nanuk had many jobs.
4 E. I don't know.

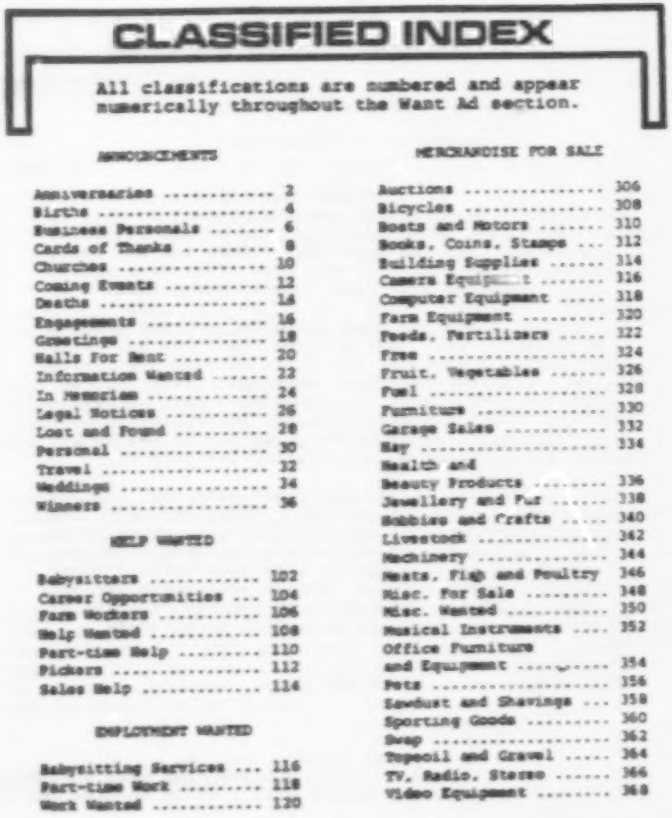
R31. Which one of the following best describes Nanuk?

3 A. badly behaved
3 B. weak and sickly
69 *C. responsible
14 D. carefree
6 E. I don't know.

R32. This passage tells you ...

73 *A. how Nanuk and her people lived.
3 B. why there are no more caribou.
11 C. a story about how a girl named Nanuk saved her family.
4 D. a story about hunting caribou.
5 E. I don't know.

IN THIS SECTION YOU WILL BE ASKED SOME QUESTIONS ABOUT A NEWSPAPER INDEX. DO NOT TRY TO READ THE ENTIRE INDEX. INSTEAD, READ QUESTIONS 33 TO 36 AND THEN FIND THE ANSWERS BY LOOKING THROUGH THE INDEX.



CLASSIFIED INDEX

All classifications are numbered and appear numerically throughout the Want Ad section.

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R33. If you wanted to buy some blueberries, to which advertising number should you refer?

7 A. 30
68 *B. 326
6 C. 336
5 D. 362
8 E. I don't know.

R34. If you wanted to buy a used camera, under which heading should you look?

3 A. Employment Wanted
5 B. Help Wanted
6 C. Announcements
74 *D. Merchandise for Sale
6 E. I don't know.

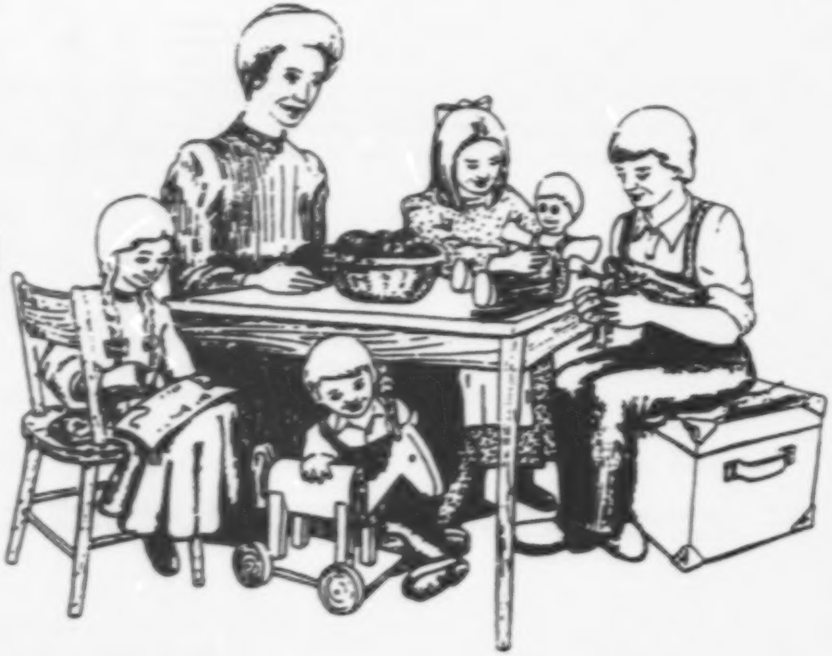
R35. If you had lost your dog, under which advertising number should you look to see if someone had found it?

3 A. 18
9 B. 22
72 *C. 28
4 D. 30
6 E. I don't know.

R36. If you wanted to buy a kitten, under which advertising number should you look?

5 A. 26
6 B. 28
5 C. 352
70 *D. 356
7 E. I don't know.

USE THE INFORMATION IN THE PICTURE BELOW TO ANSWER QUESTIONS 37 TO 40.



R37. The boy sitting on the floor is playing with ...

87 *A. a wooden horse on wheels.
2 B. a straw and twig man.
1 C. a home-made doll.
1 D. his brother.
1 E. I don't know.

R38. How many children are making something in this picture?

9 A. one
39 *B. two
35 C. three
9 D. four
1 E. I don't know.

R39. The woman in the picture looks ...

4 A. disgusted with the children.
2 B. angry with the children.
78 *C. interested in the children.
5 D. bored.
4 E. I don't know.

R40. Where do the people in this picture most likely live?

79 *A. on a pioneer farm
4 B. in a large city
2 C. on a desert
2 D. on a boat
6 E. I don't know.

FORM 4S

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 10, CAREFULLY READ EACH SENTENCE. THEN, CHOOSE THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

S1. "He thought about waiting for the tide to come in."

In this sentence, the word tide means ...

89 *A. rise and fall of the sea.
3 B. laundry soap.
2 C. joining of two ropes.
1 D. gritty sand.
5 E. I don't know.

S2. The needle showed that we were travelling northwest.

In this sentence, the word needle most likely means ...

1 A. coniferous leaf.
11 B. sewing tool.
1 C. tease.
82 *D. compass pointer.
4 E. I don't know.

S3. The students were told to record their observations in their notebooks.

In this sentence, the word record means ...

11 A. put on tape.
75 *B. write down.
3 C. a phonograph disk.
8 D. a score never reached before.
3 E. I don't know.

S4. She was the first customer.

Customer means ...

2 A. costume maker.
3 B. sales person.
90 *C. buyer.
2 D. store keeper.
2 E. I don't know.

S5. He inquired about the game.

Inquired means ...

56 *A. asked.
5 B. shouted.
9 C. cheered.
8 D. felt badly.
21 E. I don't know.

S6. The boys peered at the stranger.

Peered means ...

4 A. laughed.
2 B. jumped.
81 *C. stared.
7 D. smiled.
5 E. I don't know.

S7. He treated me unjustly.

Unjustly means ...

6 A. fairly.
76 *B. not fairly.
4 C. somewhat fairly.
3 D. very fairly.
10 E. I don't know.

S8. Most people found Tim very likeable.

Tim ...

29 A. liked everyone.
10 B. enjoyed being liked.
5 C. tried to be liked.
52 *D. was easy to like.
3 E. I don't know.

S9. When Andrew and Kevin came to the corner, they said good-bye. Andrew turned to the right while Kevin turned to the left. The boys are good friends even though they live at the opposite ends of the street.

The boys live ...

13 A. on different streets.
3 B. at the same end of the street.
14 C. across the same street from each other.
68 *D. at different ends of the street.
2 E. I don't know.

S10. A shout went up from the crowd as they saw the bright green and yellow livery of the palace guard.

The word livery most likely means ...

51 *A. special uniform.
5 B. cannons.
3 C. horses.
14 D. royal family.
26 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 11 TO 16 USING INFORMATION FROM THIS PASSAGE.

Arnitoo grabbed for something to hold onto. But it was too late. Before he could get a grip on the side of the canoe, the whale dove. Its huge tail slammed the water. The canoe rolled. Arnitoo slipped. Over the side he went--down, down deep into the freezing arctic water.

The boy's hands were still wildly reaching out as he sank. Suddenly they grabbed something solid. The next thing Arnitoo knew, he was out of the water -- choking and spluttering, and zipping along the surface at high speed. To his astonishment, Arnitoo had accidentally grabbed the whale's flippers. He was on the fastest ride of his life.

"Let go, Arnitoo," screamed his friend Frank. "Let go!" Astounded, the hunters watched as the frightened beluga and its even more frightened passenger sped past them. Now the whale veered back towards the canoes, which were desperately scrambling to stay out of its way. Arnitoo and the whale slid close to the Mikijuks' freighter canoe and then swung around towards the open bay.

"Now!" bellowed Mr. Mikijuk. "Let go NOW!" Arnitoo let go. He plunged off the whale's slippery back into deep water. A few seconds later the boy felt the mittened hands of the hunters dragging him into a canoe. Soon he heard the sandy scrape of the canoe bottom as it touched the beach. Someone quickly heated water on the Coleman stove and handed him a cup of hot sweet tea.

"Arnitoo Ispellie," announced Mr. Mikijuk, "you have just ridden a whale. Now you're an arctic cowboy." He wrapped a blanket around Arnitoo's shivering shoulders.

"Arnitoo" an excerpt from Arctic Canary Cowboy by Robert S. Grant is reprinted by permission of the author.

GO TO THE NEXT PAGE.

S11. When did Arnitoo plunge off the whale's back?

19 A. when the whale dove under the boat
58 *B. when the whale moved towards the open bay
10 C. when the men beached the canoe
5 D. when he was tired of riding the whale
7 E. I don't know.

S12. How did Arnitoo become an arctic cowboy?

1 A. He raced dog sleds.
2 B. He rode a horse in the ocean.
6 C. He roped a whale.
88 *D. He rode on a whale.
2 E. I don't know.

S13. Where did this story take place?

2 A. on the Fraser River
10 B. in the Antarctic
2 C. in the Pacific
82 *D. in the Arctic
3 E. I don't know.

S14. What would be a good title for the passage?

86 *A. A Whale of a Ride
4 B. Shooting the Rapids
2 C. A Cup of Tea
2 D. Fishing for Salmon
5 E. I don't know.

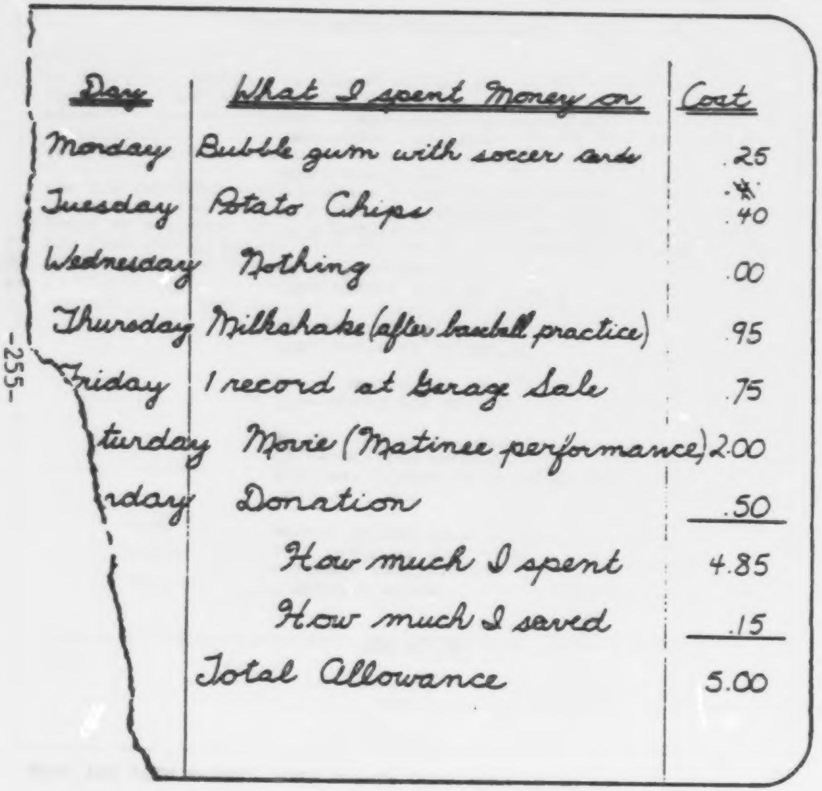
S15. What type of whale did Arnitoo ride?

65 *A. a beluga whale
5 B. a killer whale
11 C. a blue whale
4 D. a narwhale
14 E. I don't know.

S16. What caused Arnitoo to fall out of the canoe?

2 A. he lost his life jacket
3 B. a sudden Arctic storm
5 C. the freezing Arctic water
84 *D. the movement of the whale
6 E. I don't know.

USE THE INFORMATION IN THIS PAGE FROM SUSAN'S SPENDING DIARY SHOWN BELOW TO ANSWER QUESTIONS 17 TO 19.



Day	What I spent Money on	Cost
Monday	Bubble gum with soccer cards	.25
Tuesday	Potato Chips	.40
Wednesday	Nothing	.00
Thursday	Milkshake (after baseball practice)	.95
Friday	1 record at Garage Sale	.75
turday	Movie (Matinee performance)	2.00
nday	Donation	.50
	How much I spent	4.85
	How much I saved	.15
	Total Allowance	5.00

S17. Which was the **most expensive** food item Susan bought?

2	A.	bubble gum
4	B.	potato chips
1	C.	chocolate bar
90	*D.	milkshake
2	E.	I don't know.

S18. When did Susan have the milkshake?

92	*A.	after baseball practice
2	B.	during the movie
1	C.	at the garage sale
2	D.	with her potato chips
2	E.	I don't know.

S19. On which day of the week did she go to a sale?

3	A.	Thursday
90	*B.	Friday
2	C.	Saturday
2	D.	Sunday
3	E.	I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 20 TO 23.

THE MOUSE

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor----

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

"The bread box is tin
And I cannot get in.

"The jam's in a jar
My teeth cannot mar.

"The cheese sits by itself
On the ice-box shelf.

"All night I run
Searching and seeking;
All night I run
About the floor.

"Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

-- Elizabeth Coatsworth

S20. What does the mouse ask for?

85 *A. food
1 B. music
5 C. moonlight
5 D. a bare place for dancing
2 E. I don't know.

S21. How can the mouse find his way at night?

86 *A. by the light of the moon
2 B. by the light of the ice-box
5 C. by following the crumbs
3 D. by the slant on the floor
3 E. I don't know.

S22. "There are few crumbs
In this world any more."

What do these lines mean?

74 *A. There's not much food left around any more.
16 B. There is more bread than there are crumbs.
2 C. A watched pot never boils.
1 D. Don't cry over spilt milk.
6 E. I don't know.

S23. What does the mouse want to do?

7 A. search for a crack of moonlight
1 B. chew on the table
13 C. dance on the bare floor
73 *D. eat a few leftover crumbs
4 E. I don't know.

USE THE INFORMATION IN THE ANNOUNCEMENT BELOW TO ANSWER QUESTIONS 24 TO 27.

Deep River Elementary School

On Thursday, June 3, our school will take part in the District Track and Field Meet at the Sixth Avenue Ball Park in Port Edwards. Transportation is free of charge. If you are interested in having your child take part please sign and return this form to the school by Wednesday, May 26.

You are reminded that lunch is served by our Home-School Committee. The menu includes hot dogs, salad, milk, and fresh fruit at a charge of $2.50 per person. If you wish to buy lunch for your child, please send the $2.50 in a sealed envelope to the school no later than Friday, May 28.

Yours truly,
J. Smith
Ms. J. Smith
Principal

- tear along the dotted line -

Name ____________________
Grade ____________________
Teacher ____________________

I wish my child to take part in the District Track and Field Meet.

____
Signature of Parent or Guardian

S24. Who should sign the consent form?

86 *A. the parent or guardian
4 B. the principal
2 C. the Home-School Committee
4 D. the student
2 E. I don't know.

S25. What should students do with the form after it has been signed by a parent or guardian?

3 A. Bring it to the Track Meet.
64 *B. Return it to school by Wednesday, May 26.
26 C. Return it in a sealed envelope by May 28.
3 D. Give it to the Home-School president.
2 E. I don't know.

S26. What is the cost of transportation?

36 A. $2.50
1 B. $4.00
2 C. $5.00 for the whole family
56 *D. There is no charge.
2 E. I don't know.

S27. According to the announcement, what is on the menu?

87 *A. salad, milk, fruit and hot dogs
4 B. hot dogs, salad, chocolate milk
2 C. fruit, hot dogs, and chips
2 D. salad, ice cream and hot dogs
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 28 TO 32 USING INFORMATION FROM THIS PASSAGE.

FOXES OF THE FROZEN NORTH

When you hear the word "fox", you probably picture a slender, reddish animal with large, pointed ears. The red fox, the kind of North American fox with the greatest range, looks like that. But foxes of the frozen north are different. Arctic foxes have chunky bodies, small ears, and coats that change colour with the seasons.

Some Arctic foxes are white; others are blue. The white fox lives mostly in the Far North where snow blankets the ground for most of the year. This fox has a winter coat that is almost pure white. Its summer coat is brownish gray. The blue fox is found mostly farther south, where there is less snow. Its bluish gray fur is dark in winter and light in summer.

Arctic foxes are well suited to life in cold lands. They have thick winter coats. Their ears are smaller than those of the red fox. Animals lose body heat through the thin skin of their ears. The smaller ears of Arctic foxes help the animals conserve heat.

As Arctic foxes run over the ice and snow, long hair between the pads of each paw protects their feet from the cold. When they curl up to rest, they wrap their bushy tails around their bodies and use the tips to cover their noses.

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S 28. What is one difference between Arctic foxes and foxes of other areas?

10 A. Arctic foxes have bigger ears.
4 B. Arctic foxes eat more.
5 C. Arctic foxes eat less.
72 *D. Arctic foxes have chunky bodies.
6 E. I don't know.

S29. How are the feet of the Arctic foxes protected from the cold?

3 A. Their feet are big.
73 *B. There is long hair between the pads.
5 C. Their feet are small.
9 D. There is rough skin on the sole of the foot.
5 E. I don't know.

S30. Which one of the following statements tells you about how Arctic foxes keep warm?

15 A. They have bluish-gray fur.
50 *B. They use their tails like blankets.
10 C. Snow blankets the ground for most of the year.
14 D. Their coats change colour with the seasons.
7 E. I don't know.

S 31. How would foxes of the frozen north most likely change if the weather got warmer?

41 *A. Their coats would get thinner.
42 B. The colour of their coats would get lighter.
4 C. They would get fatter.
3 D. Their ears would get smaller.
16 E. I don't know.

S32. This passage tells you ...

82 *A. facts about Arctic foxes.
3 B. why foxes are important to man.
4 C. why we should try to save the foxes.
3 D. a story about a fox who didn't like the cold.
4 E. I don't know.

IN THIS SECTION YOU WILL BE ASKED SOME QUESTIONS ABOUT A TABLE OF CONTENTS. DO NOT TRY TO READ THE ENTIRE TABLE. INSTEAD, READ EACH QUESTION AND THEN FIND THE ANSWER BY LOOKING THROUGH THE TABLE OF CONTENTS. ANSWER QUESTIONS 33 TO 36.

UNIT 1 - THE EARTH WE LIVE ON
  1. The Earth in Space 7
  2. Maps and Globes 15
  3. Land and Water 29

UNIT 2 - LIVING IN THE DESERT
  1. North American Deserts 45
  2. African Deserts 53
  3. Asian Deserts 61
  4. Australian Deserts 67

UNIT 3 - LIVING IN WESTERN COASTAL LANDS
  1. Northwest Coast of North America 79
  2. Southwest Coast of South America 89
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  4. Northwest Europe 101

UNIT 4 - LIVING IN TROPICAL RAIN FORESTS
  1. The Amazon River Basin 119
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UNIT 5 - LIVING ON PLAINS
  1. Interior Plains of North America 149
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UNIT 6 - LIVING IN MOUNTAINS
  1. The Rocky Mountains of North America . . . 191
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UNIT 7 - STORIES ABOUT OUR COUNTRY
  1. Great Events 231
  2. Famous Canadians 239
  3. Historic Places 245

KEY SOCIAL STUDIES UNDERSTANDINGS 259

GLOSSARY OF SOCIAL STUDIES WORDS 267

INDEX 273

S33. On which page would you begin to find out about living in the deserts of Asia?

12 A. page 45
4 B. page 53
73 *C. page 61
3 D. page 67
3 E. I don't know.

S34. In Unit 6, on which page would you begin to find out about mountains?

8 A. page 61
11 B. page 119
67 *C. page 191
4 D. page 219
5 E. I don't know.

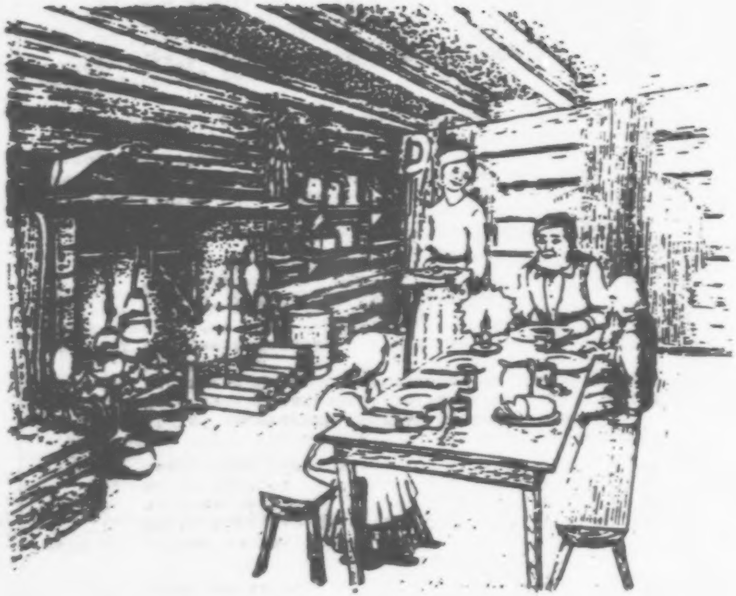
S35. What would most likely be the best title for a set of notes on Unit 2?

63 *A. Deserts of the World
10 B. North American Deserts
5 C. African Deserts
10 D. The Earth We Live On
6 E. I don't know.

S36. In which unit would you find out about important people, places and events in Canada?

8 A. Unit 3
5 B. Unit 5
3 C. Unit 6
71 *D. Unit 7
5 E. I don't know.

USE THE INFORMATION IN THE PICTURE BELOW TO ANSWER QUESTIONS 37 TO 40.



S37. Where does the light in this picture come from?

86 *A. the candle and the fire
2 B. lamps
2 C. old-fashioned lanterns
2 D. the sun
1 E. I don't know.

S38. Which one of the following details tells you it is likely that there are trees nearby?

2 A. There are boots standing by the wall.
4 B. The fireplace is made of stone.
4 C. There are dried vegetables hanging from the ceiling.
80 * D. The furniture and walls are made of wood.
3 E. I don't know.

S39. From this picture, you can tell that food in this home is cooked ...

81 *A. in a fireplace.
5 B. on a wood stove.
3 C. on a coal stove.
2 D. in an outdoor oven.
2 E. I don't know.

S40. Where did the people in this picture most likely live?

63 *A. on a pioneer farm
1 B. in a large city
17 C. in the far north
4 D. on a desert island
6 E. I don't know.

FORM 4T

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 10, CAREFULLY READ EACH SENTENCE. THEN, CHOOSE THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

T1. Jamie went to the museum.

Museum means ...

94 *A. a building where rare objects are kept.
1 B. a stately tomb.
1 C. the janitor's supply room.
1 D. a small room off the gymnasium.
3 E. I don't know.

T2. The child was in a state of panic.

Panic means ...

4 A. starvation.
80 *B. terror.
4 C. tiredness.
3 D. happiness.
8 E. I don't know.

T3. Her opponent stood in the far corner.

Opponent means ...

15 A. friend.
2 B. broom.
2 C. golf clubs.
71 *D. person on the other side.
10 E. I don't know.

T4. After the cake cools, I'm going to frost it.

In this sentence, the word frost most likely means ...

6 A. put frozen dew on.
8 B. chill.
1 C. keep very still.
82 *D. put icing on.
2 E. I don't know.

T5. When we arrived, her mother said that Jane was out.

In this sentence, out most likely means ...

4 A. excused.
1 B. old-fashioned.
3 C. three strikes.
90 *D. not at home.
2 E. I don't know.

T6. He didn't feel that our explanation was satisfactory.

In this sentence, feel means ...

49 *A. believe.
23 B. touch.
19 C. have an emotion.
3 D. hint.
5 E. I don't know.

T7. Nan's sister was married last weekend. All the family met at the church. It was the first time Nan had attended a wedding ceremony.

A ceremony is a ...

2 A. polite message.
12 B. small meeting.
14 C. large group.
64 *D. special service.
7 E. I don't know.

T8. Bob was really angry when the ball hit him on the head. He was sure that Nancy had thrown it on purpose.

If someone does something on purpose it is ...

75 *A. planned.
5 B. an accident.
4 C. mistaken.
13 D. a big joke.
2 E. I don't know.

T9. He reshuffled his books.

Reshuffled means ...

72 *A. shuffled again.
5 B. shuffled between.
4 C. shuffled next to.
5 D. shuffled across.
14 E. I don't know.

T10. Most people found Tim very likeable.

Tim ...

27 A. liked everyone.
10 B. enjoyed being liked.
5 C. tried to be liked.
55 *D. was easy to like.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 11 TO 16 USING INFORMATION FROM THIS PASSAGE.

SIMON

All summer Simon had been waiting to catch just such a fish, and here was one right in front of him. Yet he didn't feel happy.

He watched the big handsome fish pushing its nose against the gravelly sides of the clam hole, trying to find a way out, and he felt sorry for it. He knew it would die if it didn't have enough water to swim in. If only it could get back to the sea, it would live.

Simon wanted the salmon to be safe in the sea where it could swim and leap and dive, and where it would one day find its own stream. He didn't know how he was going to save the salmon. But he had to find a way.

"I won't let you die, Sukai," said Simon. (Sukai was an old Indian name for the salmon, and it meant "king of the fishes.")

Simon thought of carrying the fish to the sea, but he knew it was too big and heavy and too slippery for him to pick up.

He thought about waiting for the tide to come in, but he knew the salmon couldn't wait that long.

He looked up at the watching seagulls, but all they said was "Keer, keer."

He MUST find a way.

Looking around, he saw his clam shovel, and an idea popped into Simon's head.

From A Salmon for Simon by Betty Waterton. Reprinted by permission of the author.

T11. Why didn't Simon try to carry the fish to the sea?

21 A. The fish needed water.
2 B. The tide was in.
1 C. Simon didn't want to get his feet wet.
73 *D. It was too heavy.
2 E. I don't know.

T12. Simon probably decided to use his clam shovel to ...

5 A. catch the salmon.
5 B. dig clams.
3 C. bury the salmon.
83 *D. help the salmon.
4 E. I don't know.

T13. What was the main thing Simon was trying to do in this story?

2 A. catch clams
82 *B. save a salmon
13 C. catch salmon
2 D. save a clam
1 E. I don't know.

T14. Who do you think Simon was?

2 A. a salmon
90 *B. an Indian boy
2 C. an old man
1 D. a champion swimmer
3 E. I don't know.

T15. What is probably the best way for Simon to get the salmon to the sea?

10 A. wait for the tide to come into the clam hole
15 B. carry the fish from the clam hole to the sea
56 *C. dig a water passage from the clam hole to the sea
9 D. drag the fish from the clam hole to the sea
9 E. I don't know.

T16. What was the salmon's problem?

6 A. The seagulls were trying to catch it.
77 *B. It didn't have enough water.
3 C. Simon wanted to catch it.
9 D. The clam hole was gravelly.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 17 TO 21 USING INFORMATION FROM THIS PASSAGE.

RABBIT

When the man had somewhat got back his strength, they began their journey to the wedding. But Rabbit, being nimble-footed, ran fast and was soon so far in advance of his companion that he was lost to view. The man followed slowly, catching here and there through the green trees a glimpse of his guide's brown coat.

As he stumbled along, thinking of his troubles, he fell into a deep pit that lay close to the forest path. He was too weak to climb out, and he called loudly for help. Bunny soon missed his follower, but he heard the man's yells, and turning about, he ran back to the pit. 'Have no fear,' said Rabbit as he looked over the edge, 'I will get you out without mishap.' Then, turning his back to the pit, he let his long bushy tail hang to the bottom. 'Catch hold of my tail,' he ordered, 'hold on tight and I will pull you out.'

The man did as he was told. Rabbit sprang forward, but as he jumped, the weight of the man, who was very heavy, was more than he could bear, and poor Bunny's tail broke off within an inch of the root. The man fell back into the pit with a thud, holding in his hand poor Rabbit's tail. But Bunny in all his work as a guide had never known defeat, and he determined not to know it now. Holding to a strong tree with his front feet, he put his hind legs into the pit and said to the man, 'Take hold of my legs and hang on tight.'

The man did as he was told. Then Rabbit pulled and pulled until his hind legs stretched and he feared that they too would break off; but although the weight on them was great, he finally pulled the man out after great difficulty. He found to his dismay that his hind legs had lengthened greatly because of their heavy load. He was no longer able to walk straight, but he now had to hop along with a strange jumping gait. Even his body was much stretched, and his waist had become very slender because of his long heavy pull.

The two travellers then went on their way, Bunny hopping along, and the man moving more cautiously.

HOW RABBIT LOST HIS TAIL from CANADIAN WONDER TALES by
Cyrus MacMillan is reproduced by permission of THE BODLEY HEAD.

GO TO THE NEXT PAGE.

T17. What problem did the man have?

88 *A. He fell into a deep pit.
4 B. He broke his leg.
3 C. The rabbit refused to help him.
2 D. He slipped on rocks.
2 E. I don't know.

T18. What does the story try to explain?

41 *A. why rabbits look the way they do today
26 B. why travellers should be careful
13 C. why man and rabbit are friends
12 D. why rabbits are afraid of people
7 E. I don't know.

T19. What was the rabbit like?

4 A. He was selfish.
76 *B. He was determined.
9 C. He couldn't run fast.
3 D. He was lazy.
7 E. I don't know.

T20. What happened because the rabbit helped the man?

13 A. The man fell into a deep pit.
4 B. His eating habits changed.
69 *C. His appearance was changed.
5 D. Other animals were afraid of him.
8 E. I don't know.

T21. What kind of a story is this?

4 A. a true story of long ago
16 B. science fiction
68 *C. a fable
5 D. a true story about animals
6 E. I don't know.

USE THE INFORMATION IN THE MENU BELOW TO ANSWER QUESTIONS 22 TO 24.

BIG JOHN'S FAMILY DRIVE-IN

Plain Burger	1.50
Cheeseburger	2.25
Deluxe Burger - 1/4 lb. meat, onions, tomato, relish, lettuce	2.95
Deluxe Burger with cheese	3.25
Jumbo Burger - 2 beef patties with everything	4.25
Jumbo Burger with cheese	4.50
Hot Dog	.95
Corn Dog	1.05
French Fries	
Small	.55
Large	.95
Shakes	
Small	.95
Large	1.35
Soft Drinks	
Small	.50
Large	.75
Milk	.50
Ice Cream	
Cone	.60
Dish	.95

All prices include tax

T22. You want a hamburger with two patties and everything on it. Which burger should you order?

14 A. a deluxe burger
5 B. a plain burger
4 C. a cheeseburger
76 *D. a jumbo burger
1 E. I don't know.

T23. How much does a Deluxe Burger with cheese cost?

2 A. $2.25
6 B. $2.95
87 *C. $3.25
2 D. $4.25
1 E. I don't know.

T24. What is the most expensive item on the menu?

86 *A. jumbo burger with cheese
4 B. deluxe burger with cheese
2 C. deluxe 1/4 lb. burger
5 D. jumbo burger
1 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 25 TO 28.

THE MOUSE

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor----

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

"The bread box is tin
And I cannot get in.

"The jam's in a jar
My teeth cannot mar.

"The cheese sits by itself
On the ice-box shelf.

"All night I run
Searching and seeking;
All night I run
About the floor.

"Moonlight is there
And a bare place for dancing,
But no little feast
Is spread any more."

-- Elizabeth Coatsworth

T25. How does the mouse feel?

11 A. happy and carefree
10 B. bored and tired
67 *C. upset and discouraged
4 D. satisfied and content
6 E. I don't know.

T26. What does the mouse do all night?

3 A. hides from the cat
84 *B. searches for food
3 C. feasts morning 'til night
6 D. eats cheese and jam
2 E. I don't know.

T27. Why is the mouse complaining?

8 A. There is no bare place for dancing.
70 *B. He is discouraged and hungry.
11 C. There is only a crack of moonlight.
4 D. He can't decide which feast to attend.
5 E. I don't know.

T28. Why can't the mouse eat the jam?

79 *A. The mouse can't get in the jar.
10 B. The jam is in the ice-box.
3 C. He can't find the jam.
2 D. It's too dark.
2 E. I don't know.

USE THE INFORMATION IN THE ANNOUNCEMENT BELOW TO ANSWER QUESTIONS 29 TO 32.

Deep River Elementary School

On Thursday, June 3, our school will take part in the District Track and Field Meet at the Sixth Avenue Ball Park in Port Edwards. Transportation is free of charge. If you are interested in having your child take part please sign and return this form to the school by Wednesday, May 26.

You are reminded that lunch is served by our Home-School Committee. The menu includes hot dogs, salad, milk, and fresh fruit at a charge of $2.50 per person. If you wish to buy lunch for your child, please send the $2.50 in a sealed envelope to the school no later than Friday, May 28.

Yours truly,

Ms. J. Smith
Principal

- tear along the dotted line -

Name ______________________

Grade ______________________

Teacher ______________________

I wish my child to take part in the District Track and Field Meet.

____
Signature of Parent or Guardian

T29. How should students pay for lunch?

2 A. Buy tickets from their teacher.
2 B. Buy tickets at the track meet.
14 C. Bring $2.50 to the track meet.
75 *D. Bring $2.50 by Friday, May 28.
3 E. I don't know.

T30. When will Deep River Elementary School take part in a Track and Field Meet?

21 A. Wednesday, May 26
12 B. Friday, May 28
2 C. Wednesday, June 2
59 *D. Thursday, June 3
2 E. I don't know.

T31. Where will the track meet be held?

9 A. Deep River Elementary School
68 *B. Sixth Avenue Ball Park
6 C. District Track and Field Park
12 D. Port Edwards Field
1 E. I don't know.

T32. What is this notice about?

3 A. hot dog day
4 B. a hot lunch program
7 C. a field trip
81 *D. a track meet
1 E. I don't know.

A CARD FROM A LIBRARY CARD CATALOGUE IS SHOWN BELOW. THE CARD TELLS ABOUT A BOOK IN THE LIBRARY. USE THE CARD TO ANSWER QUESTIONS 33 TO 36.

JuvC McGraw, Eloise
813 Sawdust in his shoes
M1785 McGenn. 1950
246 p.

1. Circus---Fiction

T33. What is the title of the book?

22 A. Circus---Fiction
4 B. Eloise McGraw
66 *C. Sawdust in his shoes
2 D. Shoes in the sawdust
1 E. I don't know.

T34. How many pages does this book have?

1 A. 195
82 *B. 246
2 C. 785
8 D. 813
3 E. I don't know.

T35. Which piece of information tells you how to locate this book on a library shelf?

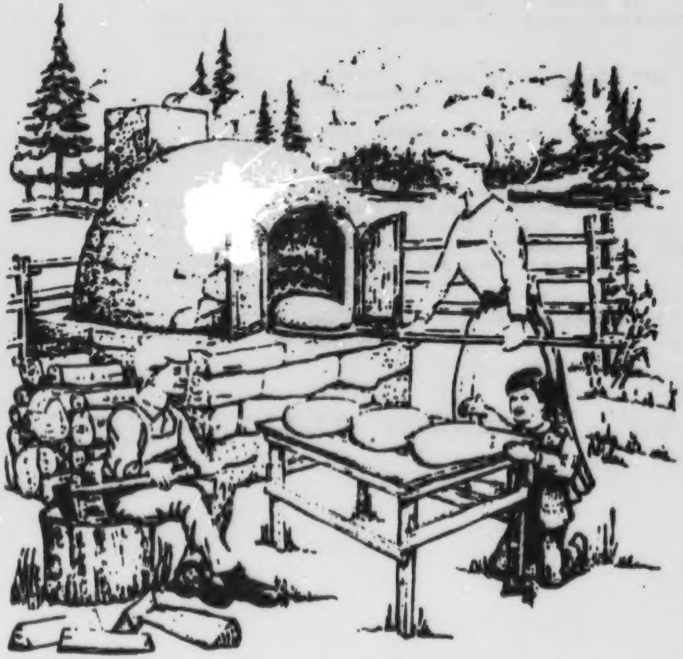
3 A. Sawdust in his shoes
9 B. McGraw, Eloise
72 *C. JuvC 813 M1785
6 D. 1. Circus
4 E. I don't know.

T36. When was this book written?

4 A. 1785
87 *B. 1950
1 C. 1976
1 D. 1978
2 E. I don't know.

USE THE INFORMATION IN THE PICTURE BELOW TO ANSWER QUESTIONS 37 TO 40.

AN OUTDOOR OVEN



T37. Why is the woman using such a long-handled tool?

2 A. The bread is heavy.
4 B. The oven is large.
4 C. The oven has a very narrow opening.
84 *D. The oven is very hot.
1 E. I don't know.

T38. How is the outdoor stone oven most likely heated?

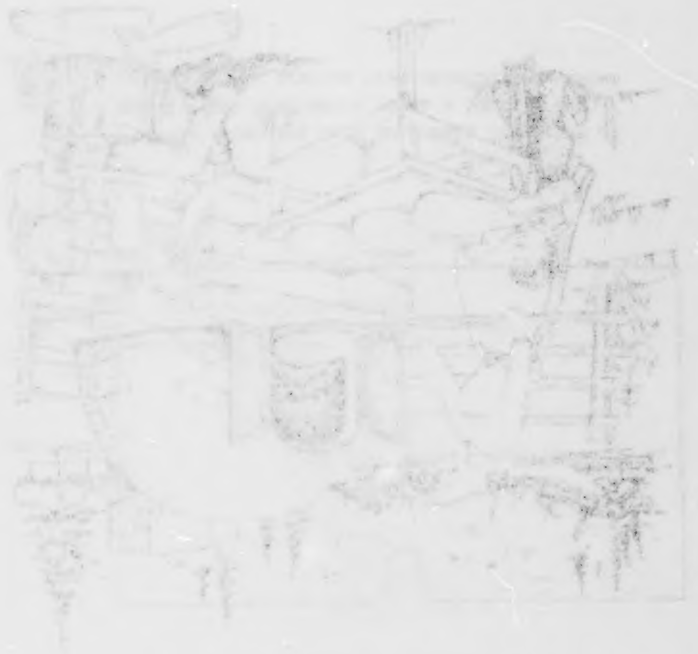
6 A. solar heat
2 B. electricity
4 C. propane
80 *D. wood
3 E. I don't know.

T39. What is the oven most likely made of?

2 A. steel
87 *B. stone
3 C. wood
1 D. tin
1 E. I don't know.

T40. Where do you think these people most likely live?

78 *A. on a pioneer farm
1 B. in a large city
7 C. in the far north
3 D. near the equator
6 E. I don't know.



ACHIEVEMENT SURVEY

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 1 TO 3 USING INFORMATION FROM THIS PASSAGE.

THE BROKEN WINDOW MYSTERY

At the police station, Captain Lake and Jim Parker, a patrolman, listened to Mike's story.

"This boy named Ted came to see my sister," Mike told them. "He has been seeing my sister a lot, and I don't like it. He is bad; I know from seeing him around school. So today I told him not to come around my house again. He did not like it. He said that he would get me for it. Then a little while after he left, a rock came through the window. That is why I came to you."

"Where is the rock?" Lake asked.

"Right here." Mike said, reaching into his coat. "It is big. I could have been killed by it."

Lake looked at the rock. Then he sent Mike home, and he and Parker went to see Ted. They told him Mike's story.

Ted looked surprised. "I didn't do it." he said. "I know he doesn't like me, but I did not know that he would make up such a story to keep me away from his sister."

Parker said, "You are going down to the station. I think you did it."

"Not so fast." said Lake. "We are not sure that he did it. We might take a look at that window first."

They went to Mike's house and looked at the broken window. "How are you sure, Captain?" asked Mike.

"Yes," Lake said. "Sure that you are the one who broke the window."

"Captain, what makes you think that?" Parker asked.

"Well, if Ted threw the rock, the broken glass would be inside the house." Lake said. "But here it is on the ground outside the house. Something thrown from inside the house broke the window. And that something was thrown by you, wasn't it, Mike?"

The sad look on Mike's face was enough of an answer for Lake and Parker.

"The Broken Window Mystery" by Jared Jensen from ACTION UNIT BOOK 1. Copyright ©1970 by Scholastic Magazines, Inc. Reprinted by permission of the publisher.

GO TO THE NEXT PAGE.

1. How did Lake know that Ted had not thrown the rock?

☐ Mike's fingerprints were on the rock.
☐ Ted told a very good story.
☐ There was broken glass outside the house.
☐ He knew Ted was honest.
☐ I don't know.

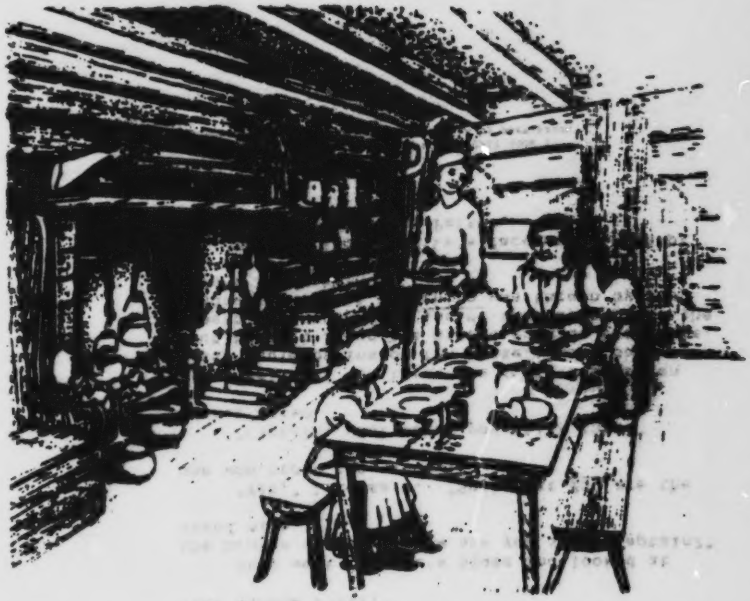
2. What do you think happened to Mike after the policemen found out the truth?

3. If someone accused you of doing something you hadn't done, to which policeman would you rather talk?

☐ Captain Lake
☐ Jim Parker

Why would you choose him?

USE THE INFORMATION IN THE PICTURE BELOW TO ANSWER QUESTIONS 4 AND 5.



4. List two things in this picture that tell you that there are trees nearby.

   1. ______________________________

   2. ______________________________

5. List three ways that the place where you live is different from the house in the picture.

   1. ______________________________

   2. ______________________________

   3. ______________________________

READ THE POEM BELOW. THEN ANSWER QUESTIONS 6 AND 7.

THE MOUSE

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor----

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

"The bread box is tin
And I cannot get in.

"The jam's in a jar
My teeth cannot mar.

"The cheese sits by itself
On the ice-box shelf.

"All night I run
Searching and seeking;
All night I run
About the floor.

"Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

-- Elizabeth Coatsworth

6. What does the mouse do all night?

☐ hides from the cat
☐ searches for food
☐ feasts morning 'til night
☐ eats cheese and jam
☐ I don't know.

7. Did you like reading this poem? ☐ Yes ☐ No

Tell why on the lines below. Be sure to give good reasons for your choice.

____

____

____

____

____

____

____

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 8 TO 11 USING INFORMATION FROM THIS PASSAGE.

FOXES OF THE FROZEN NORTH

When you hear the word "fox", you probably picture a slender, reddish animal with large, pointed ears. The red fox, the kind of North American fox with the greatest range, looks like that. But foxes of the frozen north are different. Arctic foxes have chunky bodies, small ears, and coats that change colour with the seasons.

Some Arctic foxes are white; others are blue. The white fox lives mostly in the Far North where snow blankets the ground for most of the year. This fox has a winter coat that is almost pure white. Its summer coat is brownish gray. The blue fox is found mostly farther south, where there is less snow. Its bluish gray fur is dark in winter and light in summer.

Arctic foxes are well suited to life in cold lands. They have thick winter coats. Their ears are smaller than those of the red fox. Animals lose body heat through the thin skin of their ears. The smaller ears of Arctic foxes help the animals conserve heat.

As Arctic foxes run over the ice and snow, long hair between the pads of each paw protects their feet from the cold. When they curl up to rest, they wrap their bushy tails around their bodies and use the tips to cover their noses.

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8. This passage tells you ...

- ☐ facts about Arctic foxes.
- ☐ why foxes are important to man.
- ☐ why we should try to save the foxes.
- ☐ a story about a fox who didn't like the cold.
- ☐ I don't know.

9. What is one way Arctic foxes keep warm when they are resting?

____

10. Think about ways Arctic foxes might change if they moved to a warmer climate. List three ways below.

1. ____
2. ____
3. ____

11. Look at the chart below. The boxes for **WINTER COLOUR** have been filled in for you. Fill in the boxes for **SUMMER COLOUR, SHAPE** and **EARS** in the same way, using information from the article.

	ARCTIC FOXES	RED FOXES
WINTER COLOUR	white or dark bluish grey	red
SUMMER COLOUR		
BODY SHAPE		
EARS		

APPENDIX F

Grade 7 Achievement Survey

- **Item/domain assignment and item response rates**
- **Form 7R: Item response distributions**
- **Form 7S: Item response distributions**
- **Form 7T: Item response distributions**
- **Form 7Q**

GRADE 7 ACHIEVEMENT SURVEYS

The grade 7 achievement survey items are listed below by objective, within domain. The response rate--percent of students who selected a response option--is given for each item.

Following the list of items, the achievement surveys are presented. For Forms 7R, 7S, and 7T, response distributions--as percent of students who selected each option--are given to the left of the response options. The keyed response for each item is indicated by an asterisk. Form 7Q is presented without response distributions; these may be found in Chapter 5 where they are displayed as Figures 5.5 through 5.15.

Grade 7: Domain 1, Words and Expressions

Word Recognition		Context Clues		Multiple Meanings	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
R01	100	R06	100	R04	100
R02	100	R07	100	R05	100
R03	100	R37	98	S04	100
S01	100	S06	100	S05	100
S02	100	S07	100	T04	100
S03	100	S08	100	T05	100
T01	100	T06	100		
T02	100	T07	100		
T03	100	T35	98		

Grade 7: Domain 2

Main Ideas		Sequence		Relationships		Supporting Information	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
R20	100	R35	98	R09	100	R10	100
S20	100	T10	100	R11	100	R30	99
T08	100			R26	99	S14	100
T12	100			R31	99	S15	100
				S09	100	S34	98
				S10	100	T11	100
				S36	97	T34	98
				S40	97	T36	97
				T09	100		
				T31	99		

Grade 7: Domain 3, Inferential Comprehension

Main Ideas		Predictions/ Generalizations		Relationships	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
R08	100	R19	100	R28	99
R21	100	S11	100	R34	98
R32	99	S35	98	R36	97
S18	100	S37	97	R38	97
S19	99	T13	100	R39	97
S21	100	T33	98	S12	100
T14	100	T37	97	S33	98
T25	100			S39	97
T28	99			T27	99
T40	97			T39	97

Grade 7: Domain 4, Critical Comprehension

Purpose/Bias		Evaluates Information	
Item No.	% Response	Item No.	% Response
R12	100	R27	99
R29	99	R33	99
S38	97	R40	97
T30	99	S13	100
T32	99	S16	99
		S17	100
		S32	98
		T26	99
		T29	99
		T38	97

Grade 7: Domain 5, Locates/Uses Information

Locates Information

Item No.	Percent Response
R13	100
R14	100
R15	100
S25	99
S26	99
S27	99
T18	100
T19	100
T20	100

Dictionary Skills

Item No.	Percent Response
R16	99
R17	99
R18	99
S22	100
S23	99
S24	99
T15	100
T16	100
T17	100

Interprets Maps

Item No.	Percent Response
R22	100
R23	100
R24	100
R25	100
S28	99
S29	99
S30	99
S31	99
T21	100
T22	100
T23	100
T24	100

FORM 7R

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 7, CAREFULLY READ EACH SENTENCE. THEN, SELECT THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

R1. He was very frail.

The word frail means ...

4 A. mean.
78 *B. weak.
7 C. old.
5 D. dishonest.
7 E. I don't know.

R2. He was a diplomat.

The word diplomat means ...

4 A. thief.
26 B. graduate.
6 C. professor.
54 *D. statesman.
10 E. I don't know.

R3. I'll tell him to verify that.

In this sentence, verify means ...

2 A. halve.
6 B. forecast.
5 C. anticipate.
82 *D. confirm.
5 E. I don't know.

R4. He was booked on six counts of murder.

Here count means ...

40 A. the total number.
1 B. a nobleman of European origin.
55 *C. a charge, an allegation.
2 D. the score.
1 E. I don't know.

R5. The witness was primed before his testimony in order to make sure he did it correctly.

Here primed means ...

7 A. prepared for firing.
78 *B. instructed beforehand.
6 C. put into working order.
1 D. having applied the first coat of paint.
8 E. I don't know.

R6. For tomorrow, we've planned a picnic. It would be great to have good weather for a change, but I'm not sanguine -- it's rained all month.

The word sanguine most likely means ...

10 A. prepared.
10 B. happy.
53 *C. hopeful.
20 D. discouraged.
7 E. I don't know.

R7. The boy was very ill. The old woman gave him an asafedita which her great grandmother had taught her to use.

The word asafedita most likely means ...

0 A. new shirt.
1 B. special celebration.
93 *C. old-style medication.
1 D. electric wire.
4 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 8 TO 12 USING INFORMATION FROM THIS PASSAGE.

Children worked alongside adults in the workshops, factories and mines of nineteenth-century Canada. Some employers hired children as young as eight. A child could be paid less than an adult worker; the less money an employer paid for his workers, the greater his profit.

Children in cigar factories earned about $1.00 a week. (Adults earned the same amount in a day). The factories were long sheds - ill-lit, hot, sweaty places. Beatings and other forms of punishment were common - sometimes for as little as talking to another child while working.

Young boys worked the coal mines of Nova Scotia where the shafts and tunnels of the mines were sometimes so tight that only a small boy on his hands and knees could reach the coal. For this hard and dangerous work, the boys were paid 60¢ to 80¢ a day.

In 1889, children of eight working in a Montreal cotton mill earned $92 a year. To earn this money, they worked from six in the morning until six at night, six days a week. Clothing factories were called "sweatshops" because they were usually hot and airless with many workers and machines crammed into a small room. The Hochelaga Cotton Mill near Montreal employed 1100 workers in the 1880s. Of these, half were girls and young women who were paid less than 75¢ a day while men who did the same job earned a dollar.

The early trade unions fought for an end to child labour. They wanted it to be illegal to hire a child younger than 16. However, change came slowly and even in the early 1900s, one in every 30 factory workers in Canada was a child. In 1908, Ontario passed the first child-labour act in Canada making 14 the minimum age for factory workers.

From Canada: Growth of a Nation by S. Garrod. Reprinted by permission of Fitzhenry and Whiteside.

R8. Which one of the following titles would be best suited to the last paragraph of this article?

3 A. Working in Factories
10 B. Early Trade Unions
73 *C. Changes in Child Labour
12 D. Illegal Hiring
1 E. I don't know.

R9. According to this article, children were sometimes beaten ...

2 A. for being rude to the others.
6 B. to make them do better work.
2 C. so they would go into tight mine shafts.
87 *D. for talking to each other.
2 E. I don't know.

R10. According to this article, how many hours did eight-year-olds in a Montreal cotton mill work?

82 *A. from six a.m. to six p.m. every day but Sunday
4 B. thirty-six hours each week
11 C. from six a.m. to six p.m. every day of the week
1 D. ten hours every day but Sunday
2 E. I don't know.

R11. Children were hired to work in the Nova Scotia mines because they ...

94 *A. could get through smaller spaces than men could.
2 B. could work longer hours than men.
1 C. didn't mind being beaten.
2 D. weren't afraid of dangerous work.
2 E. I don't know.

R12. In this article, the author presents ...

81 *A. facts about child labour in Canada.
12 B. opinions about why child labour is wrong.
2 C. a true story about a young boy who worked in a mine.
3 D. opinions about how much children should be paid.
3 E. I don't know.

STUDENTS ARE OFTEN ASKED TO PREPARE RESEARCH REPORTS USING AN OUTLINE GIVEN BY THE TEACHER. AFTER YOU HAVE LOCATED AND RECORDED INFORMATION, THE NEXT STEP IS TO ORGANIZE IT ACCORDING TO THE HEADINGS YOU ARE TO USE. READ THE OUTLINE BELOW.

Geography of Canada

I. Physical Features
II. Climate
III. Population
IV. Resources

IF YOU WERE GIVEN THE OUTLINE SHOWN ABOVE, UNDER WHICH HEADING WOULD YOU PLACE EACH OF THE PIECES OF INFORMATION IN QUESTIONS 13 TO 15?

R13. The highest point in Newfoundland is less than 900 m above sea level.

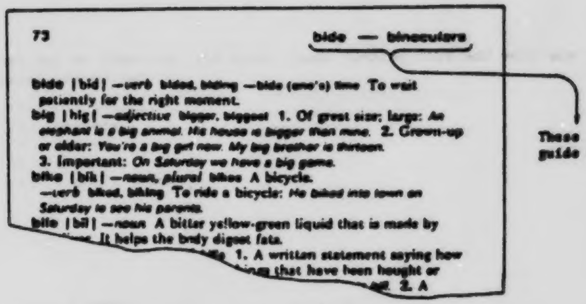
66 *A. Physical Features
21 B. Climate
2 C. Population
7 D. Resources
3 E. I don't know.

R14. British Columbia is an exporter of raw materials.

6 A. Physical Features
1 B. Climate
2 C. Population
88 *D. Resources
2 E. I don't know.

R15. Most Canadians live within 100 km of the Canada - U.S. border.

13 A. Physical Features
3 B. Climate
76 *C. Population
4 D. Resources
5 E. I don't know.



73 bide — binoculars

bide |bid| —*verb* bided, biding —bide (one's) time To wait patiently for the right moment.
big |big| —*adjective* bigger, biggest 1. Of great size; large: *An elephant is a big animal. His house is bigger than mine.* 2. Grown-up or older: *You're a big girl now. My big brother is thirteen.* 3. Important: *On Saturday we have a big game.*
bike |bik| —*noun, plural* bikes A bicycle.
—*verb* biked, biking To ride a bicycle: *He biked into town on Saturday to see his parents.*
bile |bil| —*noun* A bitter yellow-green liquid that is made by the liver. It helps the body digest fats.
1. A written statement saying how things that have been bought or 2. A

These are guide words.

R16. The guide words on a dictionary page are: athletics - attack.

Which one of the four words given would be on the same page?

19 A. attention
70 *B. atomic
3 C. archery
3 D. ashtray
4 E. I don't know

R17. The guide words on a dictionary page are: descriptive - desperate.

Which one of the four words given would be on the same page?

80 *A. designate
3 B. duckling
5 C. depth
9 D. destructive
2 E. I don't know.

R18. The guide words on a dictionary page are: intolerant - inventory.

Which one of the four words given would be on the same page?

70 *A. invade
12 B. intersect
13 C. investor
2 D. lever
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 19 TO 21 USING INFORMATION FROM THIS PASSAGE

CATNIP THE MYSTERY TOMCAT

Catnip the mystery tomcat
skids like a black motorbike.
Round the corner, carpet fringe flying,
he brakes--claws down--at my feet.

What do you want, sir, propped on hind wheels,
motor a-rumble, eyes wide windshields?
Sardines for dinner? Chin tickled?
Ears rubbed?

Why are you twitching your whiskers
(like those eight other times before)?
You've come, I've seen, and we've sat here
tomcat to tomgirl, nose-close on the floor!

Give me a hint: slide round my leg
or lick my thumb or meow.
But do SOMETHING to show what you want, please!
Right now!

A spin, a scratch, and hind legs kicking up fringe,
a furry tail flashes from sight,
Catnip the mystery tomcat
off again like a black motorbike.

-- Susan Ioannou

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R19. What does "motor a-rumble" refer to?

7 A. yowling
7 B. scratching
71 *C. purring
10 D. meowing
5 E. I don't know.

R20. In this poem, what is the tomcat compared to?

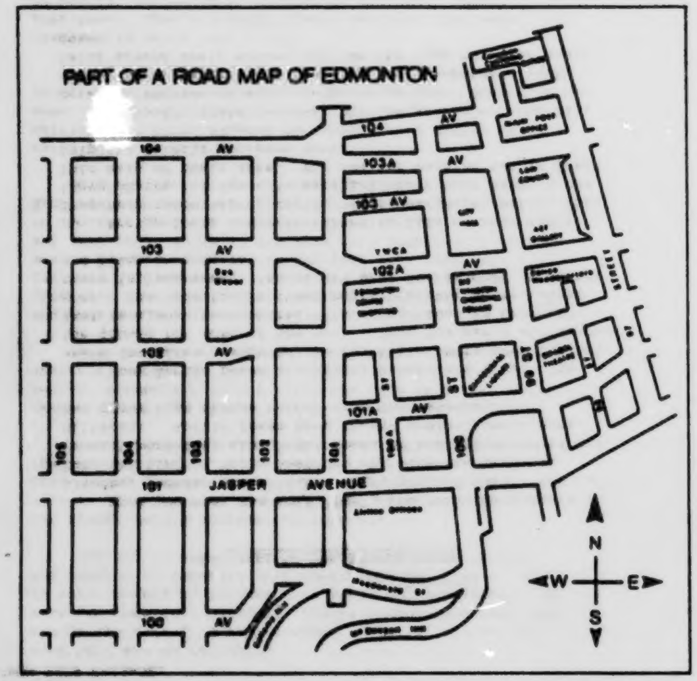
4 A. a car
1 B. a plane
92 *C. a motorbike
1 D. a BMX bike
1 E. I don't know.

R21. The poet refers to her pet as the "mystery tomcat".

What is the mystery?

4 A. where the cat is hiding
74 *B. what the cat wants
7 C. what the cat looks like
12 D. where the cat is going
3 E. I don't know.

USE THE INFORMATION GIVEN IN THE MAP SHOWN BELOW TO ANSWER QUESTIONS 22 TO 25.


PART OF A ROAD MAP OF EDMONTON
104
AV
103A
103 AV
YWCA
102A
AV
STREET
ST
99 ST
101A
101
100
103
102
AV
JASPER
AVENUE
104
105
106
N
W
E
S

R22. On the map of Edmonton, the major roads running east and west are numbered and called ...

1 A. boulevards.
3 B. streets.
1 C. drives.
92 *D. avenues.
1 E. I don't know.

R23. What is the other name for Jasper Avenue?

91 *A. 101st Avenue
5 B. Jasper Street
1 C. Bellamy Hill
1 D. 106th Street
2 E. I don't know.

R24. If you were at the shopping centre and wished to get to the airline offices, in which direction would you travel?

5 A. north
91 *B. south
1 C. east
1 D. west
1 E. I don't know.

R25. According to this map, which one of the following intersections is closest to the Citadel Theatre?

11 A. 102A Avenue and 100th Street
37 B. Jasper Avenue and 99th Street
42 *C. 102nd Avenue and 98th Street
3 D. Jasper Avenue and 102nd Street
6 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 26 TO 29 USING INFORMATION FROM THIS PASSAGE.

FOXES OF THE FROZEN NORTH

When you hear the word "fox", you probably picture a slender, reddish animal with large, pointed ears. The red fox, the kind of North American fox with the greatest range, looks like that. But foxes of the frozen north are different. Arctic foxes have chunky bodies, small ears, and coats that change colour with the seasons.

Some Arctic foxes are white; others are blue. The white fox lives mostly in the Far North where snow blankets the ground for most of the year. This fox has a winter coat that is almost pure white. Its summer coat is brownish gray. The blue fox is found mostly farther south, where there is less snow. Its bluish gray fur is dark in winter and light in summer.

Arctic foxes are well suited to life in cold lands. They have thick winter coats. Their ears are smaller than those of the red fox. Animals lose body heat through the thin skin of their ears. The smaller ears of Arctic foxes help the animals conserve heat.

As Arctic foxes run over the ice and snow, long hair between the pads of each paw protects their feet from the cold. When they curl up to rest, they wrap their bushy tails around their bodies and use the tips to cover their noses.

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R26. What is one difference between Arctic foxes and foxes of other areas?

1 A. Arctic foxes eat less.
2 B. Arctic foxes eat more.
90 *C. Arctic foxes have chunky bodies.
4 D. Arctic foxes have bigger ears.
2 E. I don't know.

R27. Which one of the following statements tells you about how Arctic foxes keep warm?

10 A. Their coats change colour with the seasons.
5 B. They have bluish gray fur.
9 C. Snow blankets the ground for most of the year.
72 *D. They use their tails like blankets.
3 E. I don't know.

R28. How would foxes of the frozen north most likely change if the weather got warmer?

48 *A. Their coats would get thinner.
43 B. The colour of their coats would get lighter.
2 C. They would get fatter.
3 D. Their ears would get smaller.
3 E. I don't know.

R29. This passage tells you ...

92 *A. facts about Arctic foxes.
2 B. why foxes are important to man.
2 C. why we should try to save the foxes.
2 D. a story about a fox who didn't like the cold.
1 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 30 TO 34 USING INFORMATION FROM THIS PASSAGE.

CHILDREN'S SPORTS

More than 26 million North American children compete in sports, according to surveys by the Youth Sports Institute. That's 6 million more children than were involved 10 years ago.

Most parents are happy that their children are involved in sports activities, but some sports and child experts are beginning to worry. They believe that children are often damaged by competing in sports at an early age.

Many children between 5 and 12 years of age have problems with motor coordination and can't perform well in sports. They are often hurt physically. Many doctors say that these children are also hurt emotionally -- they become frightened of losing and feel like they are failures. Coaches and parents who yell at them and criticize them forget that sports are supposed to be fun and that the children are trying their best.

Many parents and coaches don't realize how important athletic success is to young children. In a recent survey, elementary school girls and boys said they would rather do well in sports than get good marks in school.

Young athletes often quit sports activities because they are not "stars". But studies have shown that many high school "stars" were not top athletes in elementary school. The emphasis on winning may be causing some of the finest future athletes to drop out.

One sports expert, Dr. Roberts, calls for parents and coaches to remember that sports are for kids -- not to make coaches or parents feel proud and successful. He says "Coaches tell children 'Always remember to keep your eye on the ball.' I tell coaches, 'Always remember to keep your eye on the child.'"

R30. Which one of the following pieces of information is given in this article?

5 A. There are more boys than girls playing sports in North America.
14 B. The number of North American children involved in sports is decreasing.
5 C. The number of North American children involved in sports doesn't change from year to year.
71 *D. The number of North American children involved in sports is increasing.
4 E. I don't know.

R31. According to this article, why are children's sports a major concern?

8 A. Future athletic success depends upon good coaching.
6 B. Winning is everything.
22 C. Physical fitness influences your life.
60 *D. Children believe that success in sports is very important.
3 E. I don't know.

R32. Which one of the following statements best summarizes Dr. Roberts' opinion?

52 *A. Children are more important than the sports they play.
6 B. School is more important than athletics.
34 C. Most coaches think that winning is the most important thing.
3 D. Most coaches don't really like kids.
3 E. I don't know.

R33. Which one of the following conclusions is best supported by the information in this article?

3 A. Most coaches don't care about winning.
10 B. Children shouldn't join athletic teams until they are at least 12 years old.
22 C. Most coaches don't understand children.
58 *D. Some people have serious concerns about competitive sports for young children.
5 E. I don't know.

R34. According to this article, some of the best future athletes may be quitting sports. Why?

27 A. They are often physically injured at a young age.
18 B. They will never be high school "stars".
48 *C. They were not successful at a young age.
3 D. Their coaches don't care about winning.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 35 TO 40 USING INFORMATION FROM THIS PASSAGE.

THE DINNER PARTY

The country is India. A colonial official and his wife are giving a large dinner party. They are seated with their guests -- army officers and government attaches and their wives, and a visiting American naturalist -- in their spacious dining room, which has a bare marble floor, open rafters, and wide glass doors opening onto a veranda.

A spirited discussion springs up between a young girl who insists that women have outgrown the jumping-on-a-chair-at-the-sight-of-a-mouse era and a colonel who says that they haven't.

"A woman's unfailing reaction to any crisis," the colonel says, "is to scream. And while a man may feel like it, he has that ounce more of nerve control than a woman has. And that last ounce is what counts."

The American does not join in the argument but watches the other guests. As he looks, he sees a strange expression come over the face of the hostess. She is staring straight ahead, her muscles contracting slightly. With a slight gesture she summons the native boy standing behind her chair and whispers to him. The boy's eyes widen, and he quickly leaves the room.

Of the guests, none except the American notices this or sees the boy place a bowl of milk on the veranda just outside the open doors.

The American comes to with a start. In India, milk in a bowl means only one thing -- bait for a snake. He realizes there must be a cobra in the room. He looks up at the rafters -- the likeliest place -- but they are bare. Three corners of the room are empty and in the fourth the servants are waiting to serve the next course. There is only one place left -- under the table.

His first impulse is to jump back and warn the others, but he knows the commotion would frighten the cobra into striking. He speaks quickly, the tone of his voice so arresting that it sobers everyone.

GO TO THE NEXT PAGE.

"I want to know just what control everyone at this table has. I will count three hundred -- that's five minutes -- and not one of you is to move a muscle. Those who move will forfeit fifty rupees. Ready!"

The twenty people sit like stone images while he counts. He is saying "... two hundred and eight ..." when, out of the corner of his eye, he sees the cobra emerge and make for the bowl of milk. Screams ring out as he jumps to slam the veranda doors safely shut.

"You are right, Colonel!" the host exclaims. "A man has just shown us an example of perfect control."

"Just a minute," the American says, turning to his hostess. "Mrs. Wynnes, how did you know that cobra was in the room?"

A faint smile lights up the woman's face as she replies: "Because it was crawling across my foot."

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R35. Which one of the following events happened first in this story?

25 A. The boy's eyes widened.
14 B. A native boy placed a bowl of milk on the veranda.
6 C. The American counted to three hundred.
51 *D. The snake crawled across Mrs. Wynne's foot.
3 E. I don't know.

R36. Why did the American count to three hundred?

10 A. He wanted to win the bet.
63 *B. He wanted everyone in the room to be safe.
13 C. He wanted everyone to stop arguing.
7 D. He thought he heard a snake.
4 E. I don't know.

R37. In the sentence:

"Those who move will forfeit fifty rupees.",

forfeit most likely means ...

7 A. win.
75 *B. lose.
5 C. find.
7 D. counterfeit.
3 E. I don't know.

R38. Why did a faint smile light up Mrs. Wynnes' face as she replied, "Because it was crawling across my foot."?

9 A. She had just won fifty rupees from every guest in the room.
12 B. The cobra had tickled her feet.
68 *C. She proved that the Colonel was wrong about women.
4 D. The snake had scared away all the mice.
4 E. I don't know.

R39. Why did the American slam the veranda door?

77 *A. to keep the cobra out
4 B. to keep the insects out
7 C. to keep people from leaving
5 D. to keep the servants from hearing their conversation
3 E. I don't know.

R40. Which one of the following is clearly a statement of opinion?

14 A. A bowl of milk attracts a cobra.
55 *B. A man has more "nerve control" than a woman.
15 C. Sudden movement and noise may frighten a cobra into striking.
10 D. The likeliest place to find a cobra is in the rafters.
3 E. I don't know.

FORM 7S

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 7, CAREFULLY READ EACH SENTENCE. THEN, SELECT THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

S1. The two lines were parallel.

The word parallel means ...

26 A. straight up and down.
69 *B. always the same distance apart.
1 C. joined at one end.
2 D. crossing each other.
1 E. I don't know.

S2. Attendance was optional.

The word optional means ...

29 A. open to the public.
11 B. required.
6 C. counted.
50 *D. not required.
4 E. I don't know.

S3. Have you noticed its interior?

In this sentence interior means ...

1 A. wings.
78 *B. inside.
2 C. peak.
15 D. decoration.
3 E. I don't know.

S4. Turning on a light can have numerous effects; one is giving off light.

Here effects means ...

11 A. the quality of being operative.
64 *B. visible results.
5 C. basic meanings.
16 D. distinctive impressions.
3 E. I don't know.

S5. I'll warrant that he's here by noon. I'll bring him myself if I must.

Here warrant means to ...

3 A. give adequate reason for.
70 *B. make sure of.
20 C. guarantee security or immunity.
4 D. give approval for.
3 E. I don't know.

S6. We were surprised to see them. We did not know they were in France; our meeting was fortuitous.

The word fortuitous most likely means ...

2 A. in a group of four.
5 B. in far places.
78 *C. accidental.
8 D. well-planned.
6 E. I don't know.

S7. A shout went up from the crowd as they saw the bright green and yellow livery of the palace guard.

The word livery means ...

77 *A. special uniform.
4 B. cannons.
3 C. horses.
6 D. royal family.
10 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 8 TO 13 USING INFORMATION FROM THIS PASSAGE.

THE BLACK-TAILED PRAIRIE DOG

Black-tailed prairie dogs are one of Canada's friskiest and most playful animals. They are also an endangered species, which means that they are in danger of becoming extinct. Today, there are less than 1,000 of them alive in Canada.

These animals (who sit up and bark like a dog!) are closely related to ground squirrels and belong to the rodent order. Their name comes from their short, blacktipped tail which often wiggles with excitement.

Prairie dogs live underground in tunnelled towns. These vary in size from two to 380 hectares! Each of these towns is divided into "coteries" of one half hectare or less. Approximately nine prairie dogs live in each coterie.

Before the Canadian west was settled, life in prairie dog towns was fairly simple. Hawks and eagles might nab them on their mounds; some prairie dogs were chased and caught by badgers and coyotes; and rattlesnakes and burrowing owls sometimes stole into their burrows to eat a pup or two. But this was all part of nature - each species of animal looked after itself.

Then came the farmers and ranchers who, while settling the west, killed many of the prairie dog's predators - hawks, badgers and coyotes. This meant that the prairie dog population increased rapidly and enormously. The ranchers' cattle broke their legs by stepping into the many burrows, and the settlers feared that the grasses their cattle fed on would be gobbled up completely by the prairie dogs. Because of this they shot or poisoned as many as they could find.

Recently - and just in time, too - scientists and naturalists discovered that prairie dogs actually help ranchers and farmers. Because they eat only annual plants (which are not as good for cattle to eat anyway) the growth of good grazing vegetation is encouraged.

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GO TO THE NEXT PAGE.

S8. What is meant by grazing vegetation?

1 A. systems of tunnelled towns
5 B. safety from predators
11 C. large vegetable gardens
78 *D. plant growth for cattle to eat
4 E. I don't know.

S9. Why did the prairie dog population increase when the west was settled?

78 *A. Their enemies were killed or driven away.
9 B. The farmers and ranchers poisoned them.
8 C. The scientists and naturalists saved them.
2 D. People brought in prairie dogs for pets.
2 E. I don't know.

S10. Why did settlers kill the prairie dogs?

8 A. The prairie dogs attacked their cattle and sheep.
83 *B. They were afraid the prairie dogs would eat all the grass.
5 C. The prairie dogs encouraged plant growth.
1 D. The prairie dogs were an important source of food.
3 E. I don't know.

S11. Prairie dogs encourage good grazing vegetation. However, an old problem remains. What is this problem?

2 A. They are lonesome and no longer playful.
4 B. They no longer provide food for hawks.
84 *C. They still dig burrows dangerous to cattle.
4 D. They no longer hibernate.
6 E. I don't know.

S12. What is the most likely reason that farmers and ranchers killed hawks, badgers, and coyotes?

1 A. Farm children needed target practice.
86 *B. These animals often killed and ate farm animals.
8 C. Bounty money was paid for predatory animals.
2 D. These animals were eaten on special occasions.
4 E. I don't know.

S13. Which one of the following statements tells you a fact about prairie dogs?

2 A. They are very slow-moving.
7 B. There are too many of them.
76 *C. They eat only annual plants.
12 D. They are very friendly and cute.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 14 TO 17 USING INFORMATION FROM THIS PASSAGE.

Children worked alongside adults in the workshops, factories and mines of nineteenth-century Canada. Some employers hired children as young as eight. A child could be paid less than an adult worker; the less money an employer paid for his workers, the greater his profit.

Children in cigar factories earned about $1.00 a week. (Adults earned the same amount in a day.) The factories were long sheds - ill-lit, hot, sweaty places. Beatings and other forms of punishment were common - sometimes for as little as talking to another child while working.

Young boys worked the coal mines of Nova Scotia where the shafts and tunnels of the mines were sometimes so tight that only a small boy on his hands and knees could reach the coal. For this hard and dangerous work, the boys were paid 60¢ to 80¢ a day.

In 1889, children of eight working in a Montreal cotton mill earned $92 a year. To earn this money, they worked from six in the morning until six at night, six days a week. Clothing factories were called "sweatshops" because they were usually hot and airless with many workers and machines crammed into a small room. The Hochelaga Cotton Mill near Montreal employed 1100 workers in the 1880s. Of these, half were girls and young women who were paid less than 75¢ a day while men who did the same job earned a dollar.

The early trade unions fought for an end to child labour. They wanted it to be illegal to hire a child younger than 16. However, change came slowly and even in the early 1900s, one in every 30 factory workers in Canada was a child. In 1908, Ontario passed the first child-labour act in Canada making 14 the minimum age for factory workers.

From Canada: Growth of a Nation by S. Garrod. Reprinted by permission of Fitzhenry and Whiteside.

S14. Which province in Canada was the first to make laws about children working?

2 A. Quebec
12 B. Nova Scotia
9 C. Montreal
75 *D. Ontario
2 E. I don't know.

S15. According to this article, how did the early trade unions feel about children working?

5 A. They were proud of the way the children worked.
74 *B. They wanted to stop child labour.
16 C. They wanted to increase the profits.
2 D. They wanted the children to get paid more.
2 E. I don't know.

S16. From the information in this article, you can conclude that ...

9 A. children who worked in factories were able to earn a lot of money.
73 * B. children who worked in factories were treated very badly.
10 C. cigar factories were the worst places to work.
2 D. factory and mine owners hated children.
4 E. I don't know.

S17. Which one of the following statements is an opinion about child labour?

10 A. Children worked in hot, sweaty places.
8 B. Children were often beaten.
9 C. Children worked six days a week.
70 *D. Child labour should be against the law.
3 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 18 TO 21.

SUSPENDED

It happened so suddenly.
Just a gentle thud
And there he was
Clinging for life
Two floors up
Held by a claw
To the window frame.
Both of us suspended for a moment.
He,
Beak open
Panting breath clouding windowpane.
Glazed eyes,
Quivering panic.
I,
Not daring to breathe
Unable to help,
Willing him to hang on there.

Slowly, slowly
Calm returned to his tiny chickadee body.
Trembling stopped,
Eyes bright now,
Looking this way and that.
I could see him thinking,
"Dare I let go?".
A moment of stillness.
Then a flick of wings
And away he flew.

— Margaret Hughes

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S18. At the beginning of this poem, what probably happened to the chickadee?

12 A. A cat chased him.
12 B. An eagle clawed him.
67 *C. He flew into a closed window.
5 D. The poet caught him.
4 E. I don't know.

S19. What is the poet doing?

1 A. listening to birds sing
5 B. cleaning her windows
7 C. hanging out a window
81 *D. watching a chickadee
4 E. I don't know.

S20. At the end of the poem, how did the bird get away?

1 A. He perched in a tree.
4 B. The poet rescued him.
1 C. He climbed down.
93 *D. He flew away.
1 E. I don't know.

S21. How does the poet feel about the bird?

1 A. She wishes it would be quiet.
9 B. She wants to keep it.
84 *C. She hopes it won't fall.
2 D. She's trying to shoot it.
3 E. I don't know.

USE THE INFORMATION GIVEN IN THE DICTIONARY PAGE SHOWN BELOW TO ANSWER QUESTIONS 22 TO 24.

flag **grope**

flag (flag) the iris plant or flower: *We have lovely purple flags in our garden.* n.

flag (flag) get tired; grow weak; droop: *Her horse was flagging, but she urged him on.* v., flagged, flag-ging.

flake (flāk) 1. a flat, thin piece, usually not very large and often rather loosely held together: *a flake of snow, flakes of rust, corn flakes:* 2. come off in flakes; separate into flakes: 3. a slatted platform used for drying fish; fish flake: 1,3 n., 2 v. flaked, flak-ing.

floe (flō) a field or sheet of floating ice: *Seals are often found on floes.* n.

for-tress (fôr'tris) a place built with walls and defences: a large and well-protected fort. n.

freeze (frēz) 1. turn into ice: *The water in the pond has frozen.* 2. cause something to become hard and stiff by lowering the temperature to below 0 degrees Celsius: *By freezing meat we can keep it from spoiling.* 3. become very cold: *The boys in the tent will freeze in this weather.* 4. become motionless, usually because of fear: *The mouse froze as the snake moved toward it.* v., froze, fro-zen, freez-ing.

gale (gāl) 1. a very strong wind: 2. a noisy outburst: *gales of laughter.* n.

gaze (gāz) 1. look long and steadily: *For hours he sat gazing at the stars.* 2. a long, steady look. 1. v., gazed, gaz-ing; 2. n.

gen-tle (jen'tel) 1. mild; not severe, rough or violent: *a gentle tap.* 2. soft; low: *The cat was purring with a gentle sound.* 3. moderate: *gentle heat.* 4. kindly; friendly: *a gentle disposition.* adj., gen-tler, gen-tlest.

gore (gôr) wound with a horn or tusk: *The savage bull gored the farmer to death.* v., gored, gor-ing.

grope (grōp) 1. feel about with the hands: *He groped for a flashlight when the lights went out.* 2. search here and there rather blindly: *The detectives groped for some clue to the murder.* v., groped, grop-ing.

S22. The cod were put on the flake.

Which definition of the word flake would help you understand this sentence?

9 A. definition 1
3 B. definition 2
82 *C. definition 3
3 D. not given on this page
1 E. I don't know.

S23. They froze when they heard the terrible noise.

Which definition of freeze would help you understand this sentence?

4 A. definition 1
6 B. definition 2
4 C. definition 3
84 *D. definition 4
1 E. I don't know.

S24. A gentle wind was blowing across the bay.

Which definition of the word gentle would help you understand this sentence?

68 *A. definition 1
17 B. definition 2
5 C. definition 4
8 D. not given on this page.
1 E. I don't know.

IN THIS SECTION YOU WILL BE ASKED SOME QUESTIONS ABOUT A TABLE OF CONTENTS. DO NOT TRY TO READ THE ENTIRE TABLE. INSTEAD, READ EACH QUESTION AND THEN FIND THE ANSWER BY LOOKING THROUGH THE TABLE OF CONTENTS. ANSWER QUESTIONS 25 TO 27.

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S25. On which page would you begin to find out about living in the deserts of Asia?

5 A. Page 45
2 B. Page 53
90 *C. Page 61
1 D. Page 67
1 E. I don't know.

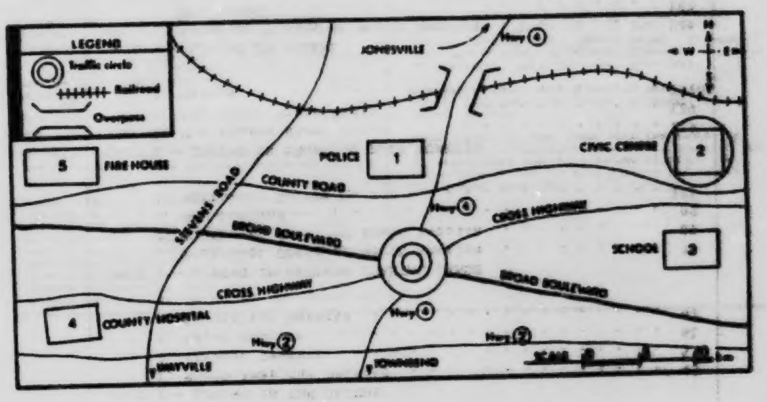
S26. On which page would you begin to find out about living in the Himalayan Mountains?

1 A. Page 61
1 B. Page 119
2 C. Page 191
94 *D. Page 219
1 E. I don't know.

S27. What would most likely be the best title for a set of notes on Unit 2?

2 A. African Deserts
5 B. North American Deserts
82 *C. Deserts of the World
8 D. The Earth We Live On
2 E. I don't know.

USE THE INFORMATION GIVEN IN THE MAP SHOWN BELOW TO ANSWER QUESTIONS 28 TO 31.


LEGEND
Traffic circle
Railroad
Overpass
JOHNSVILLE
Hwy 4
N
W
E
S
5
FIRE HOUSE
POLICE
1
CIVIC CENTRE
2
COUNTY ROAD
STEVENS ROAD
BROAD BOULEVARD
CROSS HIGHWAY
SCHOOL
3
4
COUNTY HOSPITAL
Hwy 2
UNITYVILLE
TOWNSEND
SCALE 0 5 10 km

S28. Under which road does the railway pass?

2 A. Cross Highway
37 B. Stevens Road
58 *C. Highway 4
1 D. Civic Centre
2 E. I don't know.

S29. To get from the Firehouse (5) to Townsend you would drive east on ...

78 *A. County Road and south on Highway 4.
10 B. Broad Boulevard and south on Highway 4.
5 C. Highway 4 and south on County Road.
5 D. County Road and south on Stevens Road.
2 E. I don't know.

S30. You are driving south from Jonesville on Highway 4. In which direction would you turn to get to the Civic Centre (2)?

4 A. south
85 *B. east
3 C. north
6 D. west
1 E. I don't know.

S31. To get from the Civic Centre (2) to the County Hospital (4) you would first drive ...

66 *A. west on County Road.
22 B. west on Cross Highway.
6 C. east on County Road.
4 D. south on Stevens Road.
1 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 32 TO 35 USING INFORMATION FROM THIS PASSAGE.

CAVING

"When you first go into a cave, it's kind of scary because it's dark," said Beth Matthews. "But after you light your helmet lamp and look around, you're not scared anymore. You find the most fantastic things underground - like bats!"

Beth and nine other youngsters learned about caves by spending a weekend in one in British Columbia. Most were brand-new to caving. Five adults went along. Two of them, Patrick Moretti and Ray Cole, were experienced cavers. They taught the others how to explore safely.

Before they went underground, the leaders got permission from the cave owner to explore on his property. They assigned a buddy to each one in the group. "We'll stay together," Pat said. "But sometimes we may be moving single file along a narrow passageway. Stay next to your buddy. If you have problems with your gear, your friend can help you."

Inside, the cavers moved slowly at first. It took time for them to get used to the rocks and darkness.

"Be careful of the big boulders," Ray warned. "Test each one with your foot to see if it is solid before putting all your weight on it."

A short distance inside, the cavers set up camp. Then they went off to explore. Sometimes they followed passages so small they had to move on their hands and knees. At other times, they used stepping-stones to cross underground streams. They even discovered a 10-metre waterfall inside a large cavern.

The explorers learned to pace themselves. They stopped to rest every hour and snacked often. Everyone put the food wrappers into plastic bags. "Cavers have a motto," Pat said. "Take nothing but pictures; leave nothing but footprints."

On the first day, the cavers spent more than ten hours exploring. They returned to their base camp at one o'clock in the morning after hiking, climbing and crawling more than two kilometres. Everyone was surprised at how late it was. "That's one of the funny things about caving," Kane Britt said. "It's always dark underground, so you forget whether it's day or night."

GO TO THE NEXT PAGE.

On the second day, the group again set out to explore. This time, they chose different routes. Some paths turned into dead ends. Others led to small rooms filled with crystal formations. On the ceiling of one room, Sean Moretti discovered sleeping bats.

At the end of the trip, the young explorers were very tired, but pleased with themselves. "I never knew caving could be such fun," said Kane. "Can I come back next week?"

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S32. Which one of the following statements tells you about preserving the natural state of the caves?

3 A. Choose different routes.
8 B. Stay next to your buddy.
14 C. Get permission from the owner of the land.
70 *D. Take nothing but pictures.
3 E. I don't know.

S33. Why did the cavers use caution when they first went into the cave?

5 A. Bats were sleeping in the cave.
3 B. Snakes might have bitten them.
83 *C. They had to get used to rocks and darkness.
5 D. There were paths that turned into dead ends.
2 E. I don't know.

S34. Where was the cavers' camp?

17 A. just outside the cave
4 B. in a room with crystal formations
6 C. in a large cavern which contained a 10-metre waterfall
66 *D. a short distance inside the cave
5 E. I don't know.

S35. Which one of the following best explains the caver's motto: "Take nothing but pictures; leave nothing but footprints"?

3 A. There is safety in numbers.
7 B. Take time to enjoy the beauty.
79 *C. Leave the caves the way you find them.
7 D. Be prepared and expect the unexpected.
2 E. I don't know.

S36. Why did David feel good about writing the letter?

72 *A. Writing the letter was like having company.
16 B. He knew his parents would be worrying about him.
6 C. He had promised his mother that he would write.
2 D. He had bought new stationery.
2 E. I don't know.

S37. What kind of person does David think his father is?

18 A. fair and understanding
7 B. weak and uncertain
5 C. easygoing and carefree
62 *D. stubborn and unbending
4 E. I don't know.

S38. In this story, how do you think the author intends you to feel toward David?

68 *A. sympathetic
8 B. envious
4 C. disgusted
10 D. resentful
7 E. I don't know.

S39. Why has the writer referred to David as a driftwood of a youth?

3 A. David has a chip on his shoulder.
10 B. David is thin.
69 *C. David has been moving from place to place.
11 D. David is bitter towards life.
3 E. I don't know.

S40. How would David know he was allowed to come home?

2 A. if his father wore a white shirt at the train station
83 *B. if he saw a white cloth tied on the apple tree
6 C. if his mother answered his letter immediately
3 D. if a white cloth was tied on the cherry tree
2 E. I don't know.

FORM 7T

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 7, CAREFULLY READ EACH SENTENCE. THEN, SELECT THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

T1. How much precipitation was there last month?

The word precipitation means ...

6 A. sunlight in hours.
73 *B. rain, snow, hail.
9 C. cloud cover in hours.
4 D. fog.
8 E. I don't know.

T2. Which era is that from?

The word era means ...

5 A. layer of rock.
70 *B. period of history.
4 C. country.
10 D. part of the atmosphere.
10 E. I don't know.

T3. Today I feel very independent.

In this sentence independent means ...

80 *A. free.
3 B. tired.
2 C. childish.
13 D. careless.
1 E. I don't know.

T4. The engineer noticed the telltale ahead of him and slowed down his engine.

Here telltale means ...

2 A. a strip of metal on a squash court.
4 B. an informer, storyteller.
74 *C. a railroad warning device.
6 D. a device showing the position of a rudder.
13 E. I don't know.

T5. The sailor was ordered down into the magazine.

Here magazine means a ...

4 A. lightproof chamber for film on a camera.
63 *B. room in which explosives are kept on a ship.
14 C. periodical containing various articles.
6 D. holder on a gun for ammunition.
14 E. I don't know.

T6. It's hard to get along with John. No matter what you say to him, he has a rejoinder ready.

The word rejoinder probably means ...

16 A. joke.
1 B. smile.
1 C. handshake.
78 *D. sharp answer.
3 E. I don't know.

T7. The boy averred that he had not taken the money. No matter how many times he was asked, he would not change his story.

The word averred most likely means ...

13 A. admitted.
70 *B. stated positively.
1 C. apologized.
13 D. made excuses.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 8 TO 11 USING INFORMATION FROM THIS PASSAGE.

HOW LONG HAVE I KNOWN YOU CANADA?

"How long have I known you, O Canada?" he began in the proud voice so many people knew. "A hundred years ... And today, when you celebrate your hundred years, O Canada, I am sad for all the Indian people throughout the land."

The buoyant holiday crowd was quieted by his sombre words. Chief Dan George told how freedom had been taken from his people, and how Indians have been called "savage" and "lazy" when they found it difficult to adapt to the white-man's way. He wondered how he could celebrate Canada's centenary when his people had lost so much. "Shall I thank you for the loss of my pride and authority, even among my own people?" he asked. "For the lack of my will to fight back?"

"There is a longing in the heart of my people to reach out and grasp that which is needed for our survival. There is a longing among the young of my nation to secure ... the skills that will provide them with a sense of worth and purpose ... they will emerge with their hand held forward, not to receive welfare, but to grasp the place in society that is rightfully ours."

His father, Chief Sla Holt, had told him, "Education, my son, is the key to survival in this changing world." Because of his father's wishes, he stayed in school until he was sixteen. Three years later he married Amy Jack, a beautiful girl from a neighbouring tribe. He found work on the docks as a lumberman. The work was hard, the days were long, and the pay was forty cents an hour. Then, abruptly, his working days were over. A huge log crashed into him and smashed the muscles in one hip. Disabled, he was forced to return to the reserve where he was elected chief and led his people for twelve years.

"... I am chief, but my power to make war is gone, and the only weapon left to me [illegible] speech. It is only with tongue and speech that I can fight my people's war."

T8. According to Chief Dan George, what had the Indians lost over the last hundred years?

4 A. jobs
5 B. disability
8 C. reserves
82 *D. pride
2 E. I don't know.

T9. Why was Chief Dan George sad?

9 A. His people refused to adapt to white-man's ways.
4 B. His people would not celebrate Canada's centenary.
81 *C. His people had lost their freedom and pride.
4 D. His father made him go to school until he was sixteen.
2 E. I don't know.

T10. Which one of the following happened first in Chief Dan George's life?

63 *A. Dan George married Amy Jack.
20 B. Chief Dan George gave the centennial speech.
6 C. A log smashed into Dan George.
8 D. Dan George was elected chief.
3 E. I don't know.

T11. Who was Chief Sla Holt?

3 A. Amy Jack's father
90 *B. Dan George's father
1 C. Amy Jack's Indian name
4 D. Dan George's Indian name
2 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 12 TO 14.

THE MOUSE

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor----

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

"The bread box is tin
And I cannot get in.

"The jam's in a jar
My teeth cannot mar.

"The cheese sits by itself
On the ice-box shelf.

"All night I run
Searching and seeking;
All night I run
About the floor.

"Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

-- Elizabeth Coatsworth

T12. What does the mouse do all night?

2 A. eats cheese and jam
1 B. hides from the cat
2 C. feasts morning 'til night
95 *D. searches for food
1 E. I don't know.

T13. How can the mouse find his way at night?

3 A. by following the crumbs
2 B. by the light of the ice-box
90 *C. by the light of the moon
4 D. by the slant on the floor
2 E. I don't know.

T14. What does the mouse ask for?

1 A. moonlight
1 B. music
92 *C. food
6 D. a bare place for dancing
1 E. I don't know.

USE THE INFORMATION IN THE DICTIONARY PAGE BELOW TO ANSWER QUESTIONS 15 TO 17.

rub | rug

rub (rub), *v.t.* [rubbed, rub-bing], 1. to cause (a surface) to undergo friction and pressure; as, to *rub* one's face with a towel; 2. to touch with a sweeping or brushing movement; as, the wheel *rubbed* my dress; 3. to cause to move over something with pressure; as, to *rub* the eraser over the paper; 4. to cleanse or scour by rubbing; as, she *rubbed* the silver with a cloth; 5. to erase; as, to *rub* out a mark; 6. to cause to penetrate; spread.

rub-ber (rub´ẽr), *n.* one who polishes, erases, massages, or rubs in any way; 2. anything used for erasing, polishing, as, a *rubber* on a pencil; 3. the prepared, solidified sap from various tropical trees, used for waterproofing, insulating, etc.; caoutchouc: also called *india-rubber;* 4. an article made of this, as an overshoe or an elastic band; —*adj.* made of, like, or pertaining to, rubber. —*adj.* rub´ber-y.

rub-bish (rub´ish), *n.* anything valueless; trash.

rub-ble (rub´l), *n.* rough, broken stone, brick, etc., or masonry built from it.

rud-der (rud´ẽr), *n.* 1. a broad, flat piece of wood or metal, hinged vertically to the stern of a vessel and used for steering.

rude (rōōd), *adj.* [rud-er, rud-est], 1. uncivilized; as, a *rude* people; 2. impolite; disrespectful; as, *rude* behaviour; 3. crude; unskilful; as, a *rude* carving; 4. rough; severe; as, a *rude* awakening.

ru-di-ment (rōō´di-ment), *n.* 1. one of the first principles of an art, science, etc.; as, the *rudiments* of algebra; 2. in *biology*, a part or organ partially developed; as, the *rudiments* of antlers. —*adj.* ru´di-men´ta-ry.

ruff (ruf), *n.* 1. a large pleated or fluted collar, worn in the 16th and 17th centuries; 2. anything like such a collar, as a prominent growth of feathers round the neck of a bird. —*adj.* ruffed.

ruf-fle (ruf´l), *n.* a pleated or gathered strip of material used as a trimming; —*v.t.* [ruf-fled, ruf-fling], 1. to draw into folds or plaits; 2. to furnish or adorn with plaited or gathered strips; 3. to cause to stand up or out; as, a bird *ruffles* its feathers; 4. to disturb slightly or make ripples upon; as, the wind *ruffled* the pond; 5. to disarrange; disorder (the hair); 6. to annoy or vex.

rug (rug), *n.* 1. a heavy floor-covering, usually made in one piece and often of a size to cover only part of the floor; 2. a skin or a piece of heavy cloth used as a robe or blanket.

T15. She ruffled her son's hair.

Which definition of ruffled would help you understand the sentence above?

4	A.	definition 1
12	B.	definition 4
79	*C.	definition 5
3	D.	definition 6
2	E.	I don't know.

T16. He was ruffled by the rude way she acted.

Which definition of ruffled would help you understand the sentence above?

2	A.	definition 2
18	B.	definition 4
3	C.	definition 5
74	*D.	definition 6
3	E.	I don't know.

T17. During the early Stone Age, man began to use rude tools and implements.

Which definition of rude would help you understand the sentence above?

23	A.	definition 1
4	B.	definition 2
57	*C.	definition 3
15	D.	definition 4
2	E.	I don't know.

STUDENTS ARE OFTEN ASKED TO PREPARE RESEARCH REPORTS USING AN OUTLINE GIVEN BY THE TEACHER. AFTER YOU HAVE LOCATED AND RECORDED INFORMATION, THE NEXT STEP IS TO ORGANIZE IT ACCORDING TO THE HEADINGS YOU ARE TO USE. READ THE OUTLINE BELOW.

Whales are Still A Mystery

- **I. History of Whaling**
- **II. Migration Routes**
- **III. Breeding and Calving Habits**
- **IV. Feeding Habits**
- **V. Whale Species**
- **VI. Endangered Species**

IF YOU WERE GIVEN THIS OUTLINE, UNDER WHICH HEADING WOULD YOU PLACE EACH OF THE PIECES OF INFORMATION IN QUESTIONS 18 TO 20?

T18. In 1883, 2,736 white whales were killed.

10 A. **Whale Species**
3 B. **Migration Routes**
81 *C. **History of Whaling**
2 D. **Breeding and Calving Habits**
4 E. **I don't know.**

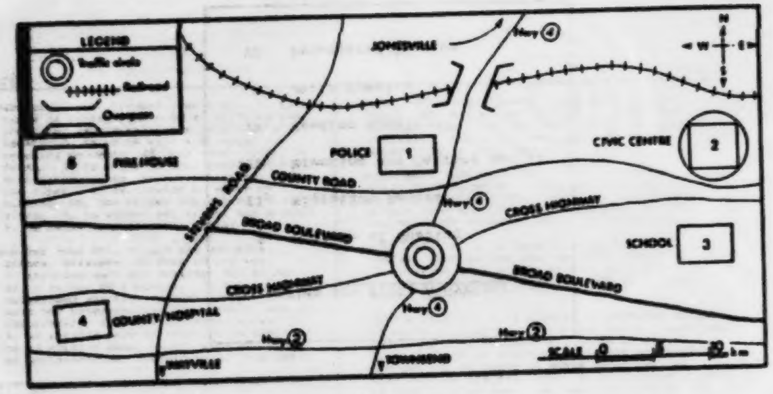
T19. The right, grey and humpback are all examples of baleen whales.

86 *A. **Whale Species**
5 B. **Breeding and Calving Habits**
4 C. **History of Whaling**
2 D. **Migration Routes**
3 E. **I don't know.**

T20. During calving, the humpback whale does not eat.

3 A. **Endangered Species**
2 B. **History of Whaling**
6 C. **Migration Routes**
85 *D. **Breeding and Calving Habits**
3 E. **I don't know.**

USE THE INFORMATION IN THE MAP BELOW TO ANSWER QUESTIONS 21 TO 24.


LEGEND
Traffic circle
Railroad
Overpass
5 FIREHOUSE
JONESVILLE
Hwy 4
N
W
E
S
POLICE 1
CIVIC CENTRE 2
COUNTY ROAD
STEVENS ROAD
CROSS HIGHWAY
BROAD BOULEVARD
SCHOOL 3
4 COUNTY HOSPITAL
Hwy 2
SCALE 0 5 10 km

T21. Under which road does the railway pass?

1 A. Cross Highway
34 B. Stevens Road
63 *C. Highway 4
1 D. Civic Centre
1 E. I don't know.

T22. To go from Jonesville to the Firehouse (5) you would drive south on Highway 4 then ...

3 A. south on Stevens Road.
2 B. west along the railway tracks.
91 *C. west on County Road.
2 D. east on Cross Highway.
2 E. I don't know.

T23. Which direction does the Cross Highway travel?

3 A. north and south
73 *B. east and west
17 C. south and east
5 D. north and west
2 E. I don't know.

T24. What is the purpose of the map legend?

1 A. to decorate the map attractively
1 B. to give the correct spelling
85 *C. to explain the symbols used on the map
11 D. to provide additional information on vehicles
2 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 25 TO 30 USING INFORMATION FROM THIS PASSAGE.

CHILDREN'S SPORTS

More than 26 million North American children compete in sports, according to surveys by the Youth Sports Institute. That's 6 million more children than were involved 10 years ago.

Most parents are happy that their children are involved in sports activities, but some sports and child experts are beginning to worry. They believe that children are often damaged by competing in sports at an early age.

Many children between 5 and 12 years of age have problems with motor coordination and can't perform well in sports. They are often hurt physically. Many doctors say that these children are also hurt emotionally -- they become frightened of losing and feel like they are failures. Coaches and parents who yell at them and criticize them forget that sports are supposed to be fun and that the children are trying their best.

Many parents and coaches don't realize how important athletic success is to young children. In a recent survey, elementary school girls and boys said they would rather do well in sports than get good marks in school.

Young athletes often quit sports activities because they are not "stars". But studies have shown that many high school "stars" were not top athletes in elementary school. The emphasis on winning may be causing some of the finest future athletes to drop out.

One sports expert, Dr. Roberts, calls for parents and coaches to remember that sports are for kids -- not to make coaches or parents feel proud and successful. He says "Coaches tell children 'Always remember to keep your eye on the ball.' I tell coaches, 'Always remember to keep your eye on the child.'"

T25. According to Dr. Roberts, what is the most important thing to remember in children's sports?

8 A. motor coordination
83 *B. the child
5 C. competition
2 D. failure
1 E. I don't know.

T26. Which one of the following pieces of information could be most logically added to this article?

7 A. Golf, tennis and racketball are sports that don't usually involve teams.
11 B. More B.C. children play soccer than play baseball, field hockey and cricket.
69 *C. Parents and coaches are the people who determine whether children will be hurt or helped by sports.
3 D. The climate in B.C. makes it hard to develop good young baseball players.
9 E. I don't know.

T27. According to this article, some of the best future athletes may be quitting sports. Why?

20 A. They are often physically injured at a young age.
23 B. They will never be "stars" in high school.
51 *C. They were not successful at a young age.
3 D. Their coaches don't care about winning.
2 E. I don't know.

T28. From the information presented in this article, you could conclude that ...

17 A. young people today are more physically fit than they were 10 years ago.
7 B. school is more important than sports.
71 *C. adults should avoid putting too much pressure on young athletes.
3 D. children shouldn't participate in sports.
2 E. I don't know.

T29. Which one of the following pieces of information could be most logically added to this article?

3 A. Most B.C. high schools don't have football teams today.
3 B. Little League baseball has a World Series each year in Williamsport.
8 C. The quality of children's soccer played in B.C. today is much better than it was ten years ago.
82 *D. Many young athletes worry about criticism from their parents and coaches if they don't win.
4 E. I don't know.

T30. Which one of the following statements best describes the information presented in this article?

2 A. It is mostly about boys' rather than girls' sports.
10 B. It is mostly about the good effects of children's sports.
25 C. It presents good and bad features of children's sports about equally.
58 *D. It is mostly about the problems with children's sports.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 31 TO 34 USING INFORMATION FROM THIS PASSAGE.

CAVING

"When you first go into a cave, it's kind of scary because it's dark," said Beth Matthews. "But after you light your helmet lamp and look around, you're not scared anymore. You find the most fantastic things underground - like bats!"

Beth and nine other youngsters learned about caves by spending a weekend in one in British Columbia. Most were brand-new to caving. Five adults went along. Two of them, Patrick Moretti and Ray Cole, were experienced cavers. They taught the others how to explore safely.

Before they went underground, the leaders got permission from the cave owner to explore on his property. They assigned a buddy to each one in the group. "We'll stay together," Pat said. "But sometimes we may be moving single file along a narrow passageway. Stay next to your buddy. If you have problems with your gear, your friend can help you."

Inside, the cavers moved slowly at first. It took time for them to get used to the rocks and darkness.

"Be careful of the big boulders," Ray warned. "Test each one with your foot to see if it is solid before putting all your weight on it."

A short distance inside, the cavers set up camp. Then they went off to explore. Sometimes they followed passages so small they had to move on their hands and knees. At other times, they used stepping-stones to cross underground streams. They even discovered a 10-metre waterfall inside a large cavern.

The explorers learned to pace themselves. They stopped to rest every hour and snacked often. Everyone put the food wrappers into plastic bags. "Cavers have a motto," Pat said. "Take nothing but pictures; leave nothing but footprints."

GO TO THE NEXT PAGE.

On the first day, the cavers spent more than ten hours exploring. They returned to their base camp at one o'clock in the morning after hiking, climbing and crawling more than two kilometres. Everyone was surprised at how late it was. "That's one of the funny things about caving," Kane Britt said. "It's always dark underground, so you forget whether it's day or night."

On the second day, the group again set out to explore. This time, they chose different routes. Some paths turned into dead ends. Others let to small rooms filled with crystal formations. On the ceiling of one room, Sean Moretti discovered sleeping bats.

At the end of the trip, the young explorers were very tired, but pleased with themselves. "I never knew caving could be such fun," said Kane. "Can I come back next week?"

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T31. Why is it easy to lose track of time in a cave?

3 A. Cavers spend a lot of time snacking and resting.
3 B. Cavers tire easily when hiking.
6 C. Cavers find many dead ends.
86 *D. It is always dark.
2 E. I don't know.

T32. What is the main purpose of the article?

9 A. to warn people of the dangers of caving
80 *B. to describe the sport of caving
4 C. to encourage people to visit British Columbia
5 D. to tell people about outdoor camping
1 E. I don't know.

T33. Which one of the following best explains the caver's motto: "Take nothing but pictures; leave nothing but footprints"?

2 A. There is safety in numbers.
8 B. Take time to enjoy the beauty.
79 *C. Leave the caves the way you find them.
7 D. Be prepared and expect the unexpected.
2 E. I don't know.

T34. Where was the cavers' camp?

18 A. just outside the cave
3 B. in a room with crystal formations
6 C. in a large cavern which contained a 10-metre waterfall
66 *D. a short distance inside the cave
5 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 35 TO 40 USING INFORMATION FROM THIS PASSAGE.

DAN

"It's about Dan. He's a great dog, but I guess you know that as well as I do. I was wondering if you could keep him here for me."

"Why should I keep Dan here, son?"

"Well, it's like this," Luke said, fumbling the words awkwardly. "My uncle won't let me keep him any more ... says he's too old." His mouth began to tremble, then he blurted out the story.

"I see, I see," Mr. Kemp said slowly, and he got up and came over to the steps and sat down and began to stroke the collie's head. "Of course, Dan's an old dog, son," he said quietly. "And sooner or later you've got to get rid of an old dog. Your uncle knows that. Maybe it's true that Dan isn't worth his keep."

"He doesn't eat much, Mr. Kemp. Just one meal a day."

"I wouldn't want you to think your uncle was cruel and unfeeling, Luke," Mr. Kemp went on. "He's a fine man ... maybe a little bit too practical and straight-forward."

"I guess that's right," Luke agreed, but he was really waiting and trusting the expression in the old man's eyes.

"Maybe you should make him a practical proposition."

"I - I don't know what you mean."

"Well, I sort of like the way you get the cows for me in the evenings," Mr. Kemp said, smiling to himself. "In fact, I don't think you need me to go along with you at all. Now, supposing I gave you seventy-five cents a week. Would you get the cows for me every night?"

"Sure I would, Mr. Kemp. I like doing it, anyway."

"All right, son. It's a deal. Now I'll tell you what to do. You go back to your uncle, and before he has a chance to open up on you, you say right out that you've come to him with a business proposition. Say it like a man, just like that. Offer to pay him the seventy-five cents a week for the dog's keep."

"But my uncle doesn't need seventy-five cents, Mr. Kemp," Luke said uneasily.

"Of course not," Mr. Kemp agreed. "It's the principle of the thing. Be confident. Remember that he's got nothing against the dog. Go to it, son. Let me know how you do," he added, with an amused smile. "If I know your uncle at all, I think it'll work."

— Morley Callaghan.

Dan is an excerpt from "Luke Baldwin's Vow".

T35. In this story, the word proposition means ...

25 A. merger.
6 B. company.
53 *C. plan.
7 D. argument.
6 E. I don't know.

T36. Mr. Kemp tells Luke that his uncle ...

6 A. doesn't like dogs.
7 B. is cruel and unfeeling.
67 *C. is a bit too practical.
15 D. is kind and understanding.
2 E. I don't know.

T37. Where does this story most likely take place?

73 *A. on a farm
18 B. in a small town
3 C. in a city
2 D. in a park
1 E. I don't know.

T38. Which one of the following is a fact rather than an opinion?

24 A. Dan is too old.
10 B. Dan is a great dog.
10 C. Dan is worth his keep.
52 *D. Dan is a collie.
2 E. I don't know.

T39. What was the real reason that Mr. Kemp offered to pay Luke 75 cents a week?

4 A. because Luke's uncle needed the money
75 *B. so Luke could keep the dog
9 C. so he wouldn't have to feed the cows himself
7 D. to give Luke something to do in the evenings
3 E. I don't know.

T40. What is Luke's problem in this story?

82 *A. His uncle wants to get rid of Luke's dog, Dan.
3 B. Luke hates living with his uncle and wants to get away from him.
4 C. His dog, Dan, is sick and Luke is afraid he is dying.
5 D. His uncle is always complaining about money and Luke needs a job.
3 E. I don't know.

FORM 7Q

ACHIEVEMENT SURVEY

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 1 TO 4 USING INFORMATION FROM THIS PASSAGE.

SOMEBODY'S SON

He sat, washed up on the side of the highway, a slim, sun-beaten driftwood of a youth. He was hunched on his strapped-together suitcase, chin on his hands, elbows on knees, staring down the road. Not a car was in sight. Except for him, the dead, still Alberta plains were empty.

Now he was eager to write that letter he had kept putting off. Somehow, writing it would be almost like having company.

He unstrapped his suitcase and fished out a small unopened package of stationery from the pocket on the underside of the lid. Sitting down in the gravel of the roadside, he closed the suitcase and used it as a desk.

Dear Mom,

If Dad will permit, I would like to come home. I know there's little chance he will. I'm not going to kid myself. I remember he said once if I ever ran off I might as well keep on going.

All I can say is that I felt leaving home was something I had to do. Before even considering college, I wanted to find out more about life and about me and the best way for us (life and me) to live with each other. Please tell Dad - and I guess this'll make him sore all over again - I'm still not certain that college is the answer for me. I think I'd like to work for a time and think it over.

You won't be able to reach me by mail, because I'm not sure where I'll be next. But in a few days I hope to be passing by our place. If there's any chance Dad will have me back, please ask him to tie a white cloth to the apple tree in the south pasture - you know the one, the Grimes Golden beside the tracks. I'll be going by on the train. If there's no cloth on the tree I'll just quietly, and without any hard feelings toward Dad - and I mean that - keep on going.

Love,
David

1. How would David know he was allowed to come home?

   ☐ if his father wore a white shirt at the train station
   ☐ if he saw a white cloth tied on the apple tree
   ☐ if his mother answered his letter immediately
   ☐ if a white cloth was tied on the cherry tree
   ☐ I don't know.

2. Think about the story again. What kind of person is David? Describe David in a few words on the line below.

3. What was it about the story that led you to describe David the way you did in question 2? Write your answer on the lines below.

4. How do you think the author intends you to feel about David?

READ THE POEM BELOW. THEN ANSWER QUESTIONS 5 TO 7.

THE MOUSE

I heard a mouse
Bitterly complaining
In a crack of moonlight
Aslant on the floor----

"Little I ask
And that little is not granted;
There are few crumbs
In this world any more.

"The bread box is tin
And I cannot get in.

"The jam's in a jar
My teeth cannot mar.

"The cheese sits by itself
On the ice-box shelf.

"All night I run
Searching and seeking;
All night I run
About the floor.

"Moonlight is there
And a bare place for dancing.
But no little feast
Is spread any more."

-- Elizabeth Coatsworth

5. What does the mouse do all night?

☐ eats cheese and jam
☐ hides from the cat
☐ feasts morning 'til night
☐ searches for food
☐ I don't know.

6. "Little I ask
And that little is not granted."

In your own words, explain what the mouse means in these lines.

7. Did you like reading this poem? ☐ Yes ☐ No

Tell why on the lines below. Be certain to give good reasons for your opinion.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 8 TO 11 USING INFORMATION FROM THIS PASSAGE.

FOXES OF THE FROZEN NORTH

When you hear the word "fox", you probably picture a slender, reddish animal with large, pointed ears. The red fox, the kind of North American fox with the greatest range, looks like that. But foxes of the frozen north are different. Arctic foxes have chunky bodies, small ears, and coats that change colour with the seasons.

Some Arctic foxes are white; others are blue. The white fox lives mostly in the Far North where snow blankets the ground for most of the year. This fox has a winter coat that is almost pure white. Its summer coat is brownish gray. The blue fox is found mostly farther south, where there is less snow. Its bluish gray fur is dark in winter and light in summer.

Arctic foxes are well suited to life in cold lands. They have thick winter coats. Their ears are smaller than those of the red fox. Animals lose body heat through the thin skin of their ears. The smaller ears of Arctic foxes help the animals conserve heat.

As Arctic foxes run over the ice and snow, long hair between the pads of each paw protects their feet from the cold. When they curl up to rest, they wrap their bushy tails around their bodies and use the tips to cover their noses.

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8. This passage tells you ...

☐ facts about Arctic foxes.

☐ why foxes are important to man.

☐ why we should try to save the foxes.

☐ a story about a fox who didn't like the cold.

☐ I don't know.

9. What is one way Arctic foxes keep warm when they are resting?

____

10. Think about ways Arctic foxes might change if they moved to a warmer climate. List three ways below.

1. ______________________________
2. ______________________________
3. ______________________________

11. Look at the chart below. The boxes for WINTER COLOUR have been filled in for you. Fill in the boxes for SUMMER COLOUR, SHAPE and EARS in the same way, using information from the article.

	ARCTIC FOXES	RED FOXES
WINTER COLOUR	white or dark bluish grey	red
SUMMER COLOUR		
BODY SHAPE		
EARS		

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 12 TO 15 USING INFORMATION FROM THIS PASSAGE.

DAN

"It's about Dan. He's a great dog, but I guess you know that as well as I do. I was wondering if you could keep him here for me."

"Why should I keep Dan here, son?"

"Well, it's like this," Luke said, fumbling the words awkwardly. "My uncle won't let me keep him any more ... says he's too old." His mouth began to tremble, then he blurted out the story.

"I see, I see," Mr. Kemp said slowly, and he got up and came over to the steps and sat down and began to stroke the collie's head. "Of course, Dan's an old dog, son," he said quietly. "And sooner or later you've got to get rid of an old dog. Your uncle knows that. Maybe it's true that Dan isn't worth his keep."

"He doesn't eat much, Mr. Kemp. Just one meal a day."

"I wouldn't want you to think your uncle was cruel and unfeeling, Luke," Mr. Kemp went on. "He's a fine man ... maybe a little bit too practical and straightforward."

"I guess that's right," Luke agreed, but he was really waiting and trusting the expression in the old man's eyes.

"Maybe you should make him a practical proposition."

"I - I don't know what you mean."

GO TO THE NEXT PAGE.

"Well, I sort of like the way you get the cows for me in the evenings," Mr. Kemp said, smiling to himself. "In fact, I don't think you need me to go along with you at all. Now, supposing I gave you seventy-five cents a week. Would you get the cows for me every night?"

"Sure I would, Mr. Kemp. I like doing it, anyway."

"All right, son. It's a deal. Now I'll tell you what to do. You go back to your uncle, and before he has a chance to open up on you, you say right out that you've come to him with a business proposition. Say it like a man, just like that. Offer to pay him the seventy-five cents a week for the dog's keep."

"But my uncle doesn't need seventy-five cents, Mr. Kemp," Luke said uneasily.

"Of course not," Mr. Kemp agreed. "It's the principle of the thing. Be confident. Remember that he's got nothing against the dog. Go to it, son. Let me know how you do," he added, with an amused smile. "If I know your uncle at all, I think it'll work."

-- Morley Callaghan.

Dan is an excerpt from "Luke Baldwin's Vow".

12. What is Luke's problem in this story?

☐ His uncle wants to get rid of Luke's dog, Dan.

☐ Luke hates living with his uncle and wants to get away from him.

☐ His dog, Dan, is sick and Luke is afraid he is dying.

☐ His uncle is always complaining about money and Luke needs a job.

☐ I don't know.

13. What was the real reason that Mr. Kemp offered to pay Luke 75 cents each week to get the cows?

____

____

14. Do you think Luke will be able to keep his dog? ☐ Yes ☐ No

Explain why on the lines below. Remember to give good reasons for your choice.

____

____

____

15. Would you enjoy reading the rest of the story about Dan? ☐ Yes ☐ No

Explain why on the lines below. Remember to give good reasons for your choice.

____

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____

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 16 AND 17 USING INFORMATION FROM THIS PASSAGE.

CHILDREN'S SPORTS

More than 26 million North American children compete in sports, according to surveys by the Youth Sports Institute. That's 6 million more children than were involved 10 years ago.

Most parents are happy that their children are involved in sports activities, but some sports and child experts are beginning to worry. They believe that children are often damaged by competing in sports at an early age.

Many children between 5 and 12 years of age have problems with motor coordination and can't perform well in sports. They are often hurt physically. Many doctors say that these children are also hurt emotionally -- they become frightened of losing and feel like they are failures. Coaches and parents who yell at them and criticize them forget that sports are supposed to be fun and that the children are trying their best.

Many parents and coaches don't realize how important athletic success is to young children. In a recent survey, elementary school girls and boys said they would rather do well in sports than get good marks in school.

Young athletes often quit sports activities because they are not "stars". But studies have shown that many high school "stars" were not top athletes in elementary school. The emphasis on winning may be causing some of the finest future athletes to drop out.

One sports expert, Dr. Roberts, calls for parents and coaches to remember that sports are for kids -- not to make coaches or parents feel proud and successful. He says "Coaches tell children 'Always remember to keep your eye on the ball.' I tell coaches, 'Always remember to keep your eye on the child.'"

16. According to this article, why are children's sports a major concern?

☐ Future athletic success depends upon good coaching.

☐ Winning is everything.

☐ Physical fitness influences your life.

☐ Children believe that success in sports is very important.

☐ I don't know.

17. This article is mostly about the dangers of children's sports. Do you think the author of this article presents a fair and accurate picture of children's sports?

☐ Yes, it is fair.

☐ No, it is not fair.

Explain why on the lines below. You may use examples from your own or your friend's experiences to support your answer if you wish.

APPENDIX G

Grade 10 Achievement Surveys

- Item/domain assignment and item response rates
- Form 10R: Item response distributions
- Form 10S: Item response distributions
- Form 10T: Item response distributions
- Form 10Q

GRADE 10 ACHIEVEMENT SURVEYS

The grade 10 achievement survey items are listed below by objective, within domain. The response rate--percent of students who selected a response option--is given for each item.

Following the list of items, the achievement surveys are presented. For Forms 10R, 10S, and 10T, response distributions--as percent of students who selected each option--are given to the left of the response options. The keyed response for each item is indicated by an asterisk. Form 10Q is presented without response distributions; these may be found in Chapter 5 where they are displayed as Figures 5.14 through 5.21.

Grade 10: Domain 1, Words and Expressions

Context Clues

Item No.	Percent Response
R03	100
R04	100
R05	100
S03	100
S04	100
S05	100
T03	100
T04	100
T05	100

Multiple Meanings

Item No.	Percent Response
R01	100
R02	100
S01	100
S02	99
T01	100
T02	100

Figurative Language

Item No.	Percent Response
R19	99
R40	93
S18	99
S37	93
T25	99
T37	95

Grade 10: Domain 2, Literal Comprehension

Main Ideas

Item No.	Percent Response
R30	97
S10	100
S24	99
S27	99
S31	97
T07	100
T33	97

Relationships

Item No.	Percent Response
R10	99
R20	99
R21	98
R24	99
R35	96
R36	95
S36	95
T12	100
T14	100
T15	100
T38	94

Supporting Information

Item No.	Percent Response
S23	99
S25	99
T40	94

Grade 10: Domain 3, Inferential Comprehension

Main Ideas		Predictions/ Generalizations		Relationships	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
S06	100	R07	100	R22	99
S15	100	R16	99	R37	94
S26	99	R18	99	R38	93
T11	100	R23	99	S38	92
T24	99	R39	93	S39	92
		S17	100	T08	99
		S29	98		
		S40	92		
		T10	100		
		T16	99		
		T26	99		
		T34	97		
		T36			

Grade 10: Domain 4, Critical Comprehension

Recognizes Purpose/source		Analyses Information/ Presentation		Recognizes Attitude/bias	
Item No.	Percent Response	Item No.	Percent Response	Item No.	Percent Response
R06	100	R09	99	R31	97
R08	99	R11	100	R33	97
R17	100	R34	97	S08	99
R25	99	S16	99	S09	100
R32	97	S32	97	S30	97
S07	100	S33	97	S34	95
S28	98	T09	100	S35	95
T06	100	T13	99	T35	96
T17	99	T22	99	T39	94
		T23	99		
		T31	97		
		T32	97		

Grade 10: Domain 5, Locates/Uses Information

Locates Information	
Item No.	Percent Response
R26	99
R27	99
R28	98
R29	98
S19	100
S20	100
S21	99
S22	99
T27	99
T28	98
T29	98
T30	98

Interprets Graphs/tables	
Item No.	Percent Response
R12	100
R13	100
R14	100
R15	100
S11	100
S12	100
S13	100
S14	100
T18	99
T19	99
T20	99
T21	99

FORM 10R

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 5, CAREFULLY READ EACH SENTENCE. THEN, SELECT THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

R1. The witness was primed before his testimony in order to make sure he did it correctly.

Here primed means ...

5 A. put into working order.
3 B. prepared for firing.
89 *C. instructed beforehand.
1 D. having applied the first coat of paint.
2 E. I don't know.

R2. The artists had designed a new standard for the country; soon it would appear everywhere.

In this sentence, standard means ...

7 A. passing mark.
10 B. stability.
31 C. model.
46 *D. emblem.
5 E. I don't know.

R3. It's hard to get along with John. No matter what you say to him, he always has a rejoinder ready.

The word rejoinder probably means ...

82 *A. sharp answer.
1 B. smile.
1 C. handshake.
13 D. joke.
3 E. I don't know.

R4. The substance was scissile, which is unusual for most rocks. It is not very important though, unless you're a scissors-carrying geologist. To most people it was just another metallic rock.

Scissile most likely means ...

50 *A. easily cut.
10 B. very shiny.
6 C. difficult to bend.
21 D. extremely soft.
11 E. I don't know.

R5. The boy averred that he had not taken the money. No matter how many times he was asked, he would not change his story.

The word averred most likely means ...

1 A. apologized.
7 B. admitted.
85 *C. stated positively.
6 D. made excuses.
1 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 6 TO 11 USING INFORMATION FROM THIS PASSAGE.

COYOTE (CANIS LATRANS)

The coyote has traditionally been one of North America's most maligned animals. While it would be difficult to defend it in some areas where its excessive depredations have been proved beyond all doubt, particularly in its killing of sheep, cattle, poultry and other farm stock, in broad terms this animal is much more an asset than a liability.

Discounting the damage done to livestock, there is ample evidence that most of the larger wildlife it kills - deer, antelope, mountain sheep, for example - are sick, injured or old. By thinning out these casualties the coyote, like the wolf and other carnivores, is simply discharging its role in the natural scheme of things. In the wild there is no room for the disabled, and the coyote's predations do much to keep wildlife populations healthy and mercifully under numerical control. If, in the process, it also preys on healthy individuals that, too, must be considered its right - its right to feed itself and its family.

Man has not always moved wisely in his management of predatory animals such as the coyote. The Grand Canyon National Game Preserve, established in 1906, is an example. To protect the mule deer population there (a personal concern of the preserve's founder, President Teddy Roosevelt) the government encouraged the killing of wolves, cougars, bobcats and coyotes. The mule deer prospered as their traditional enemies disappeared, and in 8 years their numbers increased from about 40,000 to 100,000.

What was not forecast was the capacity of the preserve to cope with other items making up the animal's diet. There was a dramatic turnaround as too many deer were forced to compete for too little food. Heavy damage was inflicted on the preserve's ecology and eventually thousands of deer died of lingering starvation. Fortunately restorative measures were taken in time and today the preserve and its deer are in a healthy, balanced state. The disaster, it became evident, would not have occurred had predator control been more wisely planned or in the opinion of some, if the size of the deer population had been left to find its natural level. The cost was heavy to both the preserve and its ecosystem. Aside from the subsequent loss of deer, during the control period 7,388 predators were destroyed.

From Wild Mammals of Canada by Frederick H. Wooding. Reprinted by permission of McGraw-Hill Ryerson Limited.

GO TO THE NEXT PAGE.

R6. From what sort of book has this material probably been extracted?

34 A. a biography
9 B. a novel
51 *C. a science book
1 D. a mathematics book
5 E. I don't know.

R7. What was the most important thing that wildlife managers learned from their experience in Grand Canyon National Game Preserve?

18 A. Mule deer will prosper if they are protected.
4 B. Larger preserves are necessary.
68 *C. The balance of nature should be maintained.
6 D. Wolves and coyotes can wipe out mule deer herds.
3 E. I don't know.

R8. What is the major purpose of this passage?

46 *A. to give information about coyotes
5 B. to predispose us in favour of mule deer
40 C. to explain why game preserves are set up
3 D. to encourage us to visit wildlife preserves
6 E. I don't know.

R9. Which one of the following conclusions is best supported by this article?

2 A. Wolves, coyotes, bobcats and cougars should be removed from national parks.
11 B. All wolves and coyotes present a danger to weaker animals.
75 *C. Wolves and coyotes have their place in the ecosystem.
9 D. Mule deer need protection.
3 E. I don't know.

R10. Why were predatory animals killed in Grand Canyon National Game Preserve?

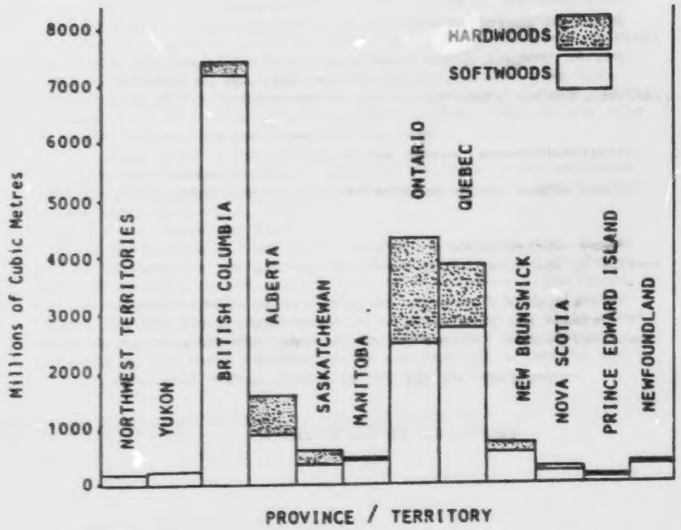
9 A. to ensure that a sufficient food supply was maintained
2 B. to protect the tourists
3 C. to prevent the spread of disease
82 *D. to protect the mule deer
3 E. I don't know.

R11. Which one of the following items of information is not essential to the author's purpose?

6 A. Coyotes are important to the ecosystem.
9 B. In the past, coyotes have been maligned.
75 *C. Teddy Roosevelt founded the Grand Canyon National Game Preserve.
6 D. The mule deer population needs some form of natural control.
4 E. I don't know.

USE THE INFORMATION IN THE CHART BELOW TO ANSWER QUESTIONS 12 TO 15.

VOLUME OF WOOD BY PROVINCE OR TERRITORY, 1973



R12. How many millions of cubic metres of timber are in B.C. timber reserves?

5 A. approximately 7000
91 *B. approximately 7300
2 C. approximately 7900
1 D. approximately 8000
1 E. I don't know.

R13. Which two provinces or territories are least likely to export hardwood timber?

1 A. Manitoba and Newfoundland
16 B. P.E.I. and Manitoba
10 C. P.E.I. and Newfoundland
71 *D. Northwest Territories and Yukon
1 E. I don't know.

R14. Which province has the greatest hardwood reserves?

0 A. Alberta
1 B. Quebec
6 C. B.C.
92 *D. Ontario
0 E. I don't know.

R15. Which province has the second greatest softwood timber reserves?

84 *A. Quebec
11 B. B.C.
3 C. Ontario
1 D. Alberta
1 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 16 TO 19.

FLIGHT OF THE ROLLER COASTER

Once more around should do it, the man confided...

And sure enough, when the roller coaster reached the peak
Of the giant curve above me -- screech of its wheels
Almost drowned by the shriller cries of the riders --

Instead of the dip and plunge with its landslide of screams
It rose in the air like a movieland magic carpet, some
    wonderful bird,

And without fuss or fanfare swooped slowly across the
    amusement park,
Over Spook's Castle, ice-cream booths, shooting-gallery;
    and losing no height

Made the last yards above the beach, where the cucumber-cool
Brakeman in the last seat saluted
A lady about to change from her bathing suit.

Then, as many witnesses duly reported, headed leisurely
    over the water,
Disappearing mysteriously all too soon behind a low-lying
    flight of clouds.

"Flight of the Roller Coaster" is reprinted from Collected Poems of Raymond Souster by permission of Oberon Press.

R16. When the man confides, Once more around should do it, what does he mean?

7 A. He should be able to regain control of the roller coaster soon.
68 *B. The roller coaster has nearly enough speed to take flight.
14 C. The passengers should soon become accustomed to the strange ride.
4 D. There should be room on the next ride for all the people who are waiting.
6 E. I don't know.

R17. In this poem, the poet is trying to ...

1 A. teach you a lesson.
4 B. explain why a mysterious event occurred.
77 *C. share a fantasy.
15 D. describe a real event.
2 E. I don't know.

R18. How does the roller-coaster ride change when it leaves the tracks?

77 *A. It becomes smooth and leisurely.
5 B. It becomes terrifying.
11 C. The riders begin to shriek and scream.
4 D. It begins to plunge toward the earth.
2 E. I don't know.

R19. Why does the poet describe the brakeman as cucumber-cool?

28 A. to emphasise that he is not as frightened as the other riders
3 B. because he is green and shivering with fright
60 *C. to emphasize his calm reaction
4 D. because the air has become colder as the roller coaster gains altitude
4 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 20 TO 25 USING INFORMATION FROM THIS PASSAGE.

WHISKERS

The long, stiff hair which grows near the mouth of a cat besides being an adornment for his head and face, serve a very useful purpose. These whiskers (viorissae) are extremely sensitive as instruments of touch. They serve the cat as small feelers to help him find his way in the dark. There is an old saying that if a cat with long whiskers can put his head through an aperture, then he can squeeze his entire body through. Even when cats cannot see, the whiskers warn them of the presence of objects. People who have observed this phenomenon carefully, relate that cats living in dark places such as cellars, have grown longer whiskers than those which have spent more time in daylight.

With most cats there is also a regular pattern of slightly smaller whiskers on the forehead on both sides of the nose above the eyes, and an occasional whisker on either cheek between the mouth and the lower part of the ear. Most often all these whiskers are white in colour, but they may also be black and even barred. These bristly hairs are much coarser and much longer than the general hair of the animal and are a very elaborate compass system by which the cat is able to take a series of bearings on the ends of these same whiskers to find his way home.

The wild relatives of our domestic cat such as the Scottish wild cat which looks like a big domestic cat, have proportionately larger white whiskers.

If you carefully watch your cat as you open the door to let him or her out, you will note that there is a sniffing of the air and the whiskers twitch, acting like antennae which might convey to the animal any signals of impending danger--he is sort of geiger-countering the air for possible clues. As he does so he is alert to every surrounding influence which might affect his cautious outgoing or his hasty incoming while the door still remains ajar.

From Purring is My Business by Wilbert Crawford, used by permission of Vesta Publications Ltd.

R20. Why does a cat twitch its whiskers?

75 *A. to check the surroundings for possible danger
2 B. because it probably has poor eyesight
17 C. to help it find its way around
4 D. to sharpen its sense of smell
1 E. I don't know.

R21. How does the texture of a cat's whiskers compare with the texture of the hairs in the cat's fur?

3 A. Whiskers are a different colour.
18 B. Whiskers are much longer.
72 *C. Whiskers are much coarser.
3 D. Whiskers are somewhat finer.
1 E. I don't know.

R22. In which one of the following ways would a cat most likely compensate for poor eyesight?

3 A. by growing thicker whiskers
8 B. by growing more whiskers
79 *C. by growing longer whiskers
6 D. by twitching its whiskers less
5 E. I don't know.

R23. What would most likely happen to a cat without whiskers?

3 A. It could squeeze its body through a smaller opening.
72 *B. Its sense of touch would be handicapped.
16 C. It would not survive in the wild.
4 D. It would lose its sense of smell.
4 E. I don't know.

R24. According to this article, the Scottish wild cat ...

82 *A. looks like a large house-cat.
4 B. can be a vicious animal.
3 C. is found only in Scotland.
5 D. has large black whiskers.
4 E. I don't know.

R25. What is the main purpose of the first paragraph?

62 *A. to explain that a cat's whiskers are sensitive instruments of touch
4 B. to discuss an old saying about cats' whiskers
27 C. to express an opinion about the necessity of cat whiskers
4 D. to tell the reader about cats
2 E. I don't know.

THE LIST OF GUIDE WORDS BELOW SHOWS THE FIRST AND LAST TOPICS CONTAINED IN EACH VOLUME OF AN ENCYCLOPAEDIA. FOR EXAMPLE, THE FIRST TOPIC IN VOLUME 2 IS "Art Nouveau" AND THE LAST TOPIC IS "Burmese". USE THIS LIST TO ANSWER QUESTIONS 26 TO 29.

Volume	Guide Words
Volume 1	A - Artillery
Volume 2	Art Nouveau - Burmese
Volume 3	Burnap - Colon
Volume 4	Colonne - Electron
Volume 5	Electron Gun - Germanicus
Volume 6	Germanium - Infantry
Volume 7	Infantry - Longhi
Volume 8	Longinus - Music
Volume 9	Musical - Phrygia
Volume 10	Phyfe - Sibelius
Volume 11	Sibenik - Uruguay
Volume 12	U.S.A. - Zworykin

R26. In which volume should you look first to find information about casualties in World War II?

9 A. Volume 3
2 B. Volume 10
5 C. Volume 11
76 *D. Volume 12
7 E. I don't know.

R27. In which volume should you look first to find information about natural resources and trading routes in Burma?

80 *A. Volume 2
11 B. Volume 3
3 C. Volume 9
3 D. Volume 10
3 E. I don't know.

R28. In which volume should you look first to find information on national parks and mountain regions in Canada?

65 *A. Volume 3
5 B. Volume 8
17 C. Volume 9
5 D. Volume 10
7 E. I don't know.

R29. In which volume should you look first to learn about liberalism from the eighteen hundreds to modern times?

2 A. Volume 3
3 B. Volume 4
81 *C. Volume 7
6 D. Volume 8
7 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 30 TO 35 USING INFORMATION FROM THIS PASSAGE.

SPECIES AT RISK

In North America, Canada contains the largest population of many species of wildlife. Chiefly because of the relatively unspoiled nature of much of the northland, Canada has managed to retain far more of its native wild life than its neighbour to the south. The contiguous United States has, unfortunately, lost almost all its wolves, grizzlies, and bald eagles.

Nevertheless, a number of native creatures have been irrevocably lost to Canada within the past century. The once abundant passenger pigeon, great auk, and Great Plains wolf will never grace our land again. Many other species currently stand at the threshold of oblivion and can only be saved by the strictest conservation measures.

The present status of 92 species and subspecies of mammals, birds, reptiles, amphibians and fish is so critical that research biologists of the Canadian Wildlife Service and National Museum of Canada have listed them under the heading of "rare and endangered" species, to be preserved and protected at all costs.

Man's population explosion increasingly threatens the environment of many animals with whom he shares the earth. The pollution of land, water and air and the destruction of wildlife habitats endanger scores of species.

Some of the rarest, most beautiful and most superbly adapted species of our wildlife heritage are now on the brink of extinction. Some species have already been lost to us forever.

R30. According to this passage, which one of the following is the greatest threat to the survival of wildlife species?

7 A. mutations in the wildlife population
5 B. natural selection
17 C. hunting, trapping and fishing
65 *D. increases in world population
3 E. I don't know.

R31. Which one of the following statements was most likely made by the author of this passage?

6 A. Within our lifetimes, strict conservation measures will no longer be necessary.
24 B. Man is, in many ways, the sole hope for the survival of nature.
6 C. Extinction of some species is part of the balance of nature.
57 *D. It is tragic that many species have been driven beyond the point of no return.
5 E. I don't know.

R32. What is the author's major purpose in this passage?

69 *A. to persuade Canadians to preserve our wildlife
7 B. to describe the animals and birds that have become extinct
5 C. to compare conservation in Canada and the United States
14 D. to describe the wildlife of Canada
2 E. I don't know.

R33. Which one of the following best describes how the author feels about the extinction of wildlife?

74 *A. concerned
5 B. cold and objective
4 C. optimistic
12 D. helpless
2 E. I don't know.

R34. Why does the author use terms such as irrevocably lost, never grace our land again, oblivion, and lost to us forever?

8 A. to illustrate the number of species we have lost
69 *B. to emphasize that extinction of a species is final
6 C. to focus attention on ways in which wildlife may be conserved
11 D. to emphasize man's role in the destruction of wildlife
3 E. I don't know.

R35. According to the author, why has a greater proportion of native wildlife survived in Canada than in the United States?

5 A. Canada has fewer "rare and endangered species".
65 *B. Canada has larger areas which are undeveloped.
15 C. Canada has stricter laws to protect wildlife.
8 D. There is more wildlife in Canada.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 36 TO 40 USING INFORMATION FROM THIS PASSAGE.

SATURDAY CLIMBING

Sixty feet up the cliff, the toe of his climbing boot resting on a ledge no wider than a dime, two fingers curled around a nubbin of rock, Barry was suddenly afraid. "Rope," he called.

At the foot of the cliff, his daughter let out the golden line of rope. As Barry felt the rope go slack, he raised his right knee and pressed his toe into a shallow depression. Grunting with the strain, he stood up on his right leg, then paused, uncertain of his next move.

The cliff had proven deceptive. Close to the base, there were large handholds, so that at first the climbing was like walking up stairs. Then, unexpectedly, the surfaces smoothed; the places where he could get a secure hold were spread farther and farther apart. The numerous cracks dwindled until there was no place to set any protection. Unable to go back because of his pride, he had continued on until he now found himself dangerously far above his last piton. If he fell, he would drop 25 feet to the piton, then 25 feet past it before his rope came taut and held him. There was, because of the elasticity of the rope, a chance that he would ground out.

The thought flitted through his mind that it would be like falling from the top of a six-storey building. Tensing his fingers, he straightened his elbow and leaned back from the rock to search for his next hold. Above him, there was a half-inch ledge. He reached up, got a good grip, then lifted his left leg higher than he ever imagined he could and set his foot on a rough patch that would provide necessary friction to hold his weight.

He had been scared many times but never like this. Never before had he been this close to paralysis, to a sensation of letting go so that the tension and the fear would be over. The way he felt, he imagined, was the way a wounded animal felt when it finally gave up fleeing and allowed itself to be killed.

Six inches from his left hand there was a vertical crack. Cautiously, he explored it with his index finger. Just within his reach it widened slightly. He ran his hand over his rack and unsnapped the smallest chock nut. He forced the aluminum wedge deep into the crack. From the wedge there hung a wire loop and from that a carabiner. Catching hold of the rope tied to his harness, he lifted it up, forced open the spring-loaded gate of the carabiner and fitted the rope into the aluminum oval.

Once the gate snapped shut, he sighed with relief. The chock nut, the wire loop, the carabiner, the rope, fragile as they looked, would hold 10 times his weight. If he wanted to, he could let go and simply hang in space.

"You all right?" his daughter called. "Yeah," he lied. "Just resting."

His voice sounded faint and breathy. He was glad she could not see his momentary weakness. He could not control the trembling of his legs. The muscle of his right arm jerked spasmodically. Ever since his wife had left them, he had tried to compensate by providing unhesitating leadership for his daughter. He did his best to keep life simple and uncomplicated. It was, he thought, the way to provide security.

He glanced down. Among the scattered gray boulders, Moira's red hair gleamed like a burnished cap.

"You're doing fine," she hollered. The cross-currents of air that played over the cliff face blurred her voice, making it seem farther away than it really was. To hear what she said, he had to strain toward the sound. "You've got another 20 feet to a big ledge. You can do it easy."

He was grateful for her confidence.

-- W.D. Valgardson

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GO TO THE PAGE NEXT.

R36. How did Barry think he could provide his daughter with a feeling of security?

28 A. by being a companion to her
11 B. by providing her with everything she needed
47 *C. by keeping life simple
4 D. by opting out of society
4 E. I don't know.

R37. Why was Barry relieved that his daughter could not see him trembling?

2 A. She will tell her mother.
4 B. She already thinks of him as a coward.
24 C. He does not want to scare her.
61 *D. He does not want to appear scared to her.
2 E. I don't know.

R38. Why does Barry want to complete the climb?

4 A. He's too scared to climb down.
72 *B. His pride won't let him go back.
13 C. His companion depends on him.
3 D. It is too easy.
2 E. I don't know.

R39. Which one of the following statements best describes how Barry feels as he climbs the cliff?

51 *A. He is so afraid that it would almost be a relief to fall and not have to try anymore.
17 B. He is more concerned about Moira's safety than about his own safety.
11 C. He is bitter and angry because he was fooled into thinking the climb would be easy.
9 D. He is excited and pleased to have the chance to test himself against the dangers of nature.
5 E. I don't know.

R40. What does the author want to emphasize by comparing the width of the ledge to a dime?

21 A. the hopelessness of the climber's situation
60 *B. the narrowness of the ledge
6 C. the cost of the activity
3 D. the shine of the cliff face
3 E. I don't know.

FORM 10S

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 5, CAREFULLY READ EACH SENTENCE. THEN, SELECT THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

S1. His application to his work made him an excellent student.

Here application means ...

68 *A. close attention.
13 B. a request, as for a job.
13 C. anything that is applied (put on or upon).
5 D. the act of putting on or upon.
1 E. I don't know.

S2. We will hire you, with the provision that you work seven days a week.

Here provision means ...

20 A. the act of supplying or fitting out.
50 *B. a stipulation or qualification.
24 C. a preparatory measure.
1 D. a stock of necessary supplies.
5 E. I don't know.

S3. A group of rorquals moved past us. They barely disturbed the water. One had to be amazed at their grace. Their motion was almost fluid, and they were so huge. Nature had done a good job here.

A rorqual is most likely a ...

15 A. fish.
22 B. dolphin.
2 C. boat.
51 *D. whale.
10 E. I don't know.

S4. A shout went up from the crowd as they saw the bright green and yellow livery of the palace guard.

The word livery most likely means ...

83 *A. special uniform.
3 B. cannons.
4 C. horses.
2 D. royal family.
7 E. I don't know.

S5. For tomorrow, we've planned a picnic. It would be great to have good weather for a change, but I'm not sanguine -- it's rained all month.

The word sanguine most likely means ...

5 A. happy.
72 *B. hopeful.
5 C. prepared.
14 D. discouraged.
4 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 6 TO 10 USING INFORMATION FROM THIS PASSAGE.

ORPHAN COLTS

The greatest horses the Cariboo Country has ever produced are orphan colts. Orphan colts are found abandoned in spring holes and are hauled out with ropes, caked in mud of the consistency and tenacity of glue.

They are found -- thin, knobby-kneed, stilt-legged -- in empty meadows from which their mothers have been removed by the attention of bears or of a city hunter who cannot distinguish between a moose and his own grandmother.

These orphan colts are brought to the home place and fed milk and calf supplement by ranch wives. Ranch men stand at the back porch and expound on the vast potential of these little orphans. They distinguish in them all the best qualities of the quarter horse, Appaloosa, Arab, Barb, and Andalusian stocks from which they have sprung.

Given time, orphan colts grow up. As a rule, they turn out to be just another cayuse. They are turned out on the range and forgotten or, with luck, sold to the American who just bought the ranch next door. But for the first year or two of their lives, they are visions of glory. Every place requires such visions from time to time. This may explain why the finding of an orphan colt is such an enjoyable experience.

From The Chilcotin Holiday by Paul St. Pierre, used by permission of The Canadian Publishers, McClelland and Stewart Limited, Toronto.

S6. According to the author, why are orphan colts "the greatest horses the Cariboo Country has ever produced"?

16 A. They usually grow up to be cayuses.
27 B. They are usually of quarter horse stock.
47 *C. They provide hope.
5 D. They can be sold to inexperienced ranchers.
5 E. I don't know.

S7. From what kind of book has this passage most likely been taken?

51 *A. personal essays
40 B. a reference book about animals
2 C. a science text
4 D. an encyclopaedia
3 E. I don't know.

S8. How does the author feel about the ranchers' visions of glory about orphan colts?

60 *A. He is sympathetic.
7 B. He is scornful.
7 C. He doesn't understand them.
14 D. He thinks the ranchers are cruel to ignore the colts when they grow up.
11 E. I don't know.

S9. How do you think the author feels about orphaned colts?

5 A. He thinks they are useless.
79 *B. He values them.
3 C. He thinks they should be left to look after themselves.
8 D. He thinks ranchers treat them badly.
4 E. I don't know.

S10. According to the author, why is finding an orphan colt such an enjoyable experience?

71 *A. Orphan colts allow people to dream of glory.
5 B. Orphan colts don't cost anything.
11 C. Orphan colts are usually well bred.
8 D. Orphan colts are easy to tame and train.
5 E. I don't know.

USE THE INFORMATION IN THE CHART SHOWN BELOW TO ANSWER QUESTIONS 11 TO 14.

BIOMES FOUND ON LAND

A Biome is an area characterized by certain plants, animals and climate.

BIOME	CLIMATE		SOME COMMON PLANTS	SOME COMMON ANIMALS
	AVERAGE PRECIPITATION PER YEAR	TEMPERATURE RANGE		
TROPICAL RAIN FOREST	200 cm	Almost constant 25°C	Vines Palm trees Orchids Ferns	Tree frogs Birds Insects Monkeys
GRASSLAND	25 to 75 cm	[illegible] to 25°[illegible]	Grasses	Antelope Gophers Rabbits Prairie dogs
DESERT	Less than 25 cm	10° to 38°C	Cacti Small bushes	Lizards Insects Mice
TEMPERATE FOREST	65 to 150 cm	-24° to 38°C	Trees: Hickory Maple Beech Oak	Deer Black bears Squirrels Insects
TAIGA	35 to 40 cm	-24° to 22°C	Evergreen trees: Spruces Conifers Firs	Moose Weasels Mink
TUNDRA	10 to 14 cm	-28° to 15°C	Lichens Mosses Grasses Small bushes	Caribou Musk Oxen Polar bears

S11. If the temperature in each biome was at its lowest point, which one of the following biomes would have the coldest weather?

4 A. grassland
2 B. taiga
3 C. temperate forest
89 *D. tundra
1 E. I don't know.

S12. Which biome generally has the smallest animals?

85 *A. desert
2 B. grassland
1 C. taiga
11 D. tropical rain forest
1 E. I don't know.

S13. In how many biomes does the temperature reach freezing level?

16 A. 3
74 *B. 4
4 C. 5
1 D. 6
4 E. I don't know.

S14. If the temperature of each biome was at its highest point, which one of the following biomes would have the warmest weather?

2 A. taiga
18 B. tropical rain forest
3 C. grassland
75 *D. temperate forest
2 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 15 TO 18.

THIS WAS MY BROTHER

for Lt.-Col. Gordon Howard McTavish
killed in action at Dieppe
August 19, 1942

This was my brother
At Dieppe,
Quietly a hero
Who gave his life
Like a gift,
Withholding nothing.

His youth...his love...
His enjoyment of being alive...
His future, like a book
With half the pages still uncut -

This was my brother
At Dieppe...
The one who built me a dollhouse
When I was seven,
Complete to the last small picture frame,
Nothing forgotten.

He was awfully good at fixing things,
At stepping into the breach when
    he was needed.

That's what he did at Dieppe;
He was needed.
And even Death must have been
    a little ashamed
At his eagerness!

-- by Mona Gould

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S15. How does the poet believe that her brother reacted when he knew he might die?

5 A. by committing suicide
12 B. he wanted to get it over with
77 *C. with silent courage
3 D. with outrage
3 E. I don't know.

S16. In this poem, death is described ...

9 A. as if it were a friend.
10 B. by comparing it to a book.
14 C. by contrasting it with youth.
63 *D. as if it had human emotions.
4 E. I don't know.

S17. From the details in this poem it seems most likely that ...

3 A. the poet's brother was younger than she.
87 *B. the poet and her brother were very close.
4 C. the poet was ashamed her brother died.
4 D. the poet's brother wanted to die.
2 E. I don't know.

S18. "His future, like a book
With half the pages still uncut."

These lines mean that ...

80 *A. no one will ever know what his future might have held.
3 B. her brother will be remembered through her book of poetry.
13 C. her brother didn't realize that his life would end so early.
1 D. there are many books her brother will never read.
2 E. I don't know.

IN THIS SECTION YOU WILL BE ASKED SOME QUESTIONS ABOUT A TABLE OF CONTENTS. DO NOT TRY TO READ THE ENTIRE TABLE. INSTEAD, READ EACH QUESTION AND THEN FIND THE ANSWER BY LOOKING THROUGH THE TABLE OF CONTENTS. ANSWER QUESTIONS 19 TO 22.

OUR CHANGING EARTH

CHAPTER ONE - GEOLOGICAL TIME 1

1.1 The Passage of Time 2
    Estimating Ages 4
    Absolute and Relative Time 7
1.2 Finding the Relative Ages of Rocks 8
    Finding Relative Ages the Hard Way 9
    Fossils as Clues 11
    Who Found Out? William Smith 15
1.3 Finding Absolute Ages of Rock Structures 19
    Radiometric Dating 21
    Dating Sedimentary and Metamorphic Rocks 24
1.4 How Long is a Year? 26
1.5 Summary and Review 29

CHAPTER TWO - EARTHQUAKES 32

2.1 On Shaky Ground 33
2.2 Why Do Earthquakes Occur? 35
    Who Found Out?
        J.Tuzo Wilson - Pioneer of Plate Tectonics . 36
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    The Seismograph 41
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CHAPTER THREE - PROSPECTING AND EXPLORATION 68

3.1 Searching for Ore Deposits 70
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    Geochemical Surveys 80
    Magnetometer Surveys 82
    Gravity Meter Surveys 83
    Low-Density Deposits 85
    Electrical Surveys 86
    Drilling 88
3.5 Summary and Review 90

S19. What section would you skim to find information about the effects of an earthquake?

8 A. 2.2
3 B. 2.3
87 *C. 2.6
1 D. 2.8
0 E. I don't know.

S20. What section would you look under to find information about how to determine the absolute age of a rock structure?

18 A. 1.2
79 *B. 1.3
1 C. 2.8
1 D. 3.4
1 E. I don't know.

S21. Where would you look to read about the person who discovered why earthquakes occur?

1 A. page 32
44 B. page 35
53 *C. page 36
1 D. page 56
1 E. I don't know.

S22. Where would you look to read about the person who discovered how to determine the relative ages of rocks?

23 A. page 8
3 B. page 9
72 *C. page 15
1 D. page 24
1 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 23 TO 27 USING INFORMATION FROM THIS PASSAGE.

MEASURING EARTHQUAKES

The Chinese, back in 132 A.D., were the first to invent an instrument that could detect earth tremors. It consisted of several dragon's head figures encircling a cylinder. Each dragon held a ball in its mouth. When the delicate balance of the device was disturbed, the balls would fall. The instrument was sensitive enough to detect earthquakes too distant to be felt otherwise.

Later, other attempts were made to create instruments that would respond to earthquake vibrations. None, however, could actually measure the intensity, or magnitude, of an earthquake.

The magnitude is affected by several factors. The greater the amount of energy released by the earthquake, the greater will be its intensity. Even the nature of the rock materials beneath an area will affect the magnitude of an earthquake. The actual measuring of an earthquake's intensity will vary according to the distance of the recorder from the quake's centre.

The Mercalli Scale. One scale that assesses the intensity of an earthquake based on the damage caused was proposed in 1902 by Giuseppi Mercalli (1850-1914), an Italian scientist. The main problem with the Mercalli scale is that it depends on human judgement. Thus, an earthquake rated "VII" by one observer might be rated only "V" by another. A more accurate measuring device was required.

The Seismograph. While the Mercalli scale measures the effects of earthquake waves, the seismograph measures the actual amount of ground motion. Within every seismograph is a large, suspended mass that is free to move independently of its supports. The rest of the instrument is anchored to a strong foundation in the ground. When an earth tremor causes the ground to shake, the inertia of the large mass within the seismograph gives it a tendency to stand still. The machine can thus measure the difference in movement between the ground and the mass. It then magnifies this difference up to 100,000 times, indicating the ground motion by the vibrations of a pen on a moving roll of paper tape. The resulting pattern is called a seismogram.

The Richter Scale. You will remember that the Mercalli scale of earthquake intensity is based on human observations. It is, therefore, subject to the errors of human judgement. The Richter scale, on the other hand, is based on the actual amount of ground motion as measured by a seismograph. Charles F. Richter (b. 1900) developed his scale in California in 1935. It is now the most well-known and widely used scale around the world for measuring earthquake magnitude.

Each point on the Richter scale represents ground vibrations ten times greater than the point before, and about 40 times the amount of energy released. Unlike the Mercalli scale, which has an upper limit of XII, the Richter scale is open-ended. This means that there is no maximum rating, although an earthquake with a magnitude of 10 or greater is unlikely. So far, the highest magnitude recorded has been 9.5 on the Richter scale in Chile, during a devastating quake in 1960.

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S23. The first earthquake detector, invented by the Chinese, indicated an earthquake when ...

11 A. a ball fell into a cylinder.
2 B. a pen vibrated on paper tape.
7 C. dragons circled a cylinder.
78 *D. balls fell from the dragons' mouths.
1 E. I don't know.

S24. What is a seismograph?

3 A. a machine which makes diagrams of earthquakes
93 *B. an instrument used to measure ground motion
2 C. an instrument used to determine the cause of earthquakes
1 D. an instrument invented by Charles F. Richter
1 E. I don't know.

S25. The first earthquake detector was able to tell ...

15 A. where an earthquake occurred.
70 *B. when an earthquake occurred.
4 C. how an earthquake occurred.
2 D. why an earthquake occurred.
7 E. I don't know.

S26. What is the main purpose of this article?

3 A. to point out the weaknesses of the Mercalli scale
3 B. to explain how a seismograph works
74 *C. to explain the measurement of earthquakes
15 D. to emphasize the magnitude of earthquakes
4 E. I don't know.

S27. What is the basis of the Mercalli scale?

21 A. the intensity at the centre of an earthquake
11 B. the magnitude of an earthquake
60 *C. amount of damage caused by an earthquake
3 D. a seismogram pattern
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 28 TO 33 USING INFORMATION FROM THIS PASSAGE.

IS IT RIGHT TO KEEP ANIMALS CAPTIVE?

Is it right to keep wild animals in zoos, parks, aquariums, taking them away from their natural habitat and making them the object of gawkers and the subject of cute performances?

You've heard both arguments.

No, it is not moral. How would you like it if you were taken away from your natural habitat and slung in a cage to pace back and forth for the rest of your natural life? How would you like to trade your freedom for a series of daily performances where you had to jump, run, and otherwise disport yourself, just to get fed? Animal captivity is cruelty, because the animal was born to live in the open, not in some zoo or park.

Yes, it is moral. Modern parks and zoos provide a clean, comfortable environment, free of the fear of being eaten by other animals. Animal performances help pay for the upkeep of all the animals in the park, zoo or aquarium. And the best way to encourage the preservation of wildlife and a respect for animals is to show them to people in pleasant surroundings since the vast majority of the population can't afford to see these animals in the wild. In some cases, species survive only because they survive in captivity. The alternative is to let poachers kill them in their natural habitat.

GO TO THE NEXT PAGE.

So which is it: moral or not? Years ago, when I first went to zoos, it never dawned on me that the small cages were a bad thing. Later it did. Most zoo animals seem either supremely bored, or almost human. Whether we need to have zoos and the like to appreciate animals, I'm not sure. Television shows animals in the wild constantly, and they are much more interesting there than in captivity.

What is right? I do not know. I see the enclosures at Stanley Park zoo and think that is wrong. I see the ranges at the wild animal parks and consider that is not wrong. I see the killer whales jumping at an aquarium and wonder if those animals are really whatever is meant by "happy."

I have no answer. Obviously, neither does our society as a whole.

-- Gerald Haslam

The Province. Reprinted by permission of the author.

S28. The main purpose of this article is to ...

28 A. express a feeling.
4 B. persuade the reader.
8 C. provide factual information.
58 *D. present an issue.
1 E. I don't know.

S29. When the author was younger he ...

9 A. thought zoo animals seemed almost human.
11 B. thought it was wrong to keep animals captive.
8 C. thought zoo animals seemed bored.
67 *D. didn't consider the issue of animal captivity.
2 E. I don't know.

S30. Which statement best describes the author's view on keeping animals captive?

5 A. He thinks it is moral.
68 *B. He has mixed feelings about the issue.
16 C. He thinks it is immoral.
6 D. He thinks there should be more research.
2 E. I don't know.

S31. From this article we can conclude that ...

76 *A. society as a whole does not know whether it is moral or immoral to keep animals in cages.
6 B. ranges in wild animal parks are more humane than zoos.
10 C. animals should not be forced to spend their lives in captivity performing for people.
3 D. keeping animals in captivity is the only way to protect them from poachers.
3 E. I don't know.

S32. Which detail could be logically added to the "no" argument?

15 A. Animals are fed nutritious food in zoos.
8 B. Zoo cages are usually kept spotlessly clean.
62 *C. Trainers often use punishment to train animals to do tricks.
6 D. Monkeys in zoo always appear to be very happy.
6 E. I don't know.

S33. What technique is used to emphasize the argument against captivity?

5 A. reliance on expert opinion
14 B. objective description
17 C. emphasis on natural dangers to wildlife
53 *D. an appeal to readers' emotions
8 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 34 TO 36 USING INFORMATION FROM THIS PASSAGE.

SNOW PEOPLE

The snow people know snow as they know themselves. In these days our scientists are busy studying the fifth elemental, not so much out of scientific curiosity but because we are anxious to hasten the rape of the north for fear that we may have to fight wars in the lands of snow. With vast expenditures of time and money, the scientists have begun to separate the innumerable varieties of snow and to give them names. They could have saved themselves the trouble. Eskimos have more than a hundred compound words to express different varieties and conditions of snow. The Lapps have almost as many. Yukagir reindeer herdsmen on the arctic coast of Siberia can tell the depth of snow cover, its degree of compactness, and the amount of internal ice crystallisation it contains simply by glancing at the surface.

From The Snow Walker by Farley Mowat, used by permission of
The Canadian Publishers, McClelland and Stewart Limited, Toronto.

S34. In this passage, the author compares scientists and people of the northlands. His comparison ...

58 *A. is favourable to the northern peoples.
8 B. is favourable to the scientists.
21 C. outlines the strengths of each group.
3 D. outlines the weaknesses of each group.
5 E. I don't know.

S35. What is the author's attitude toward development of our northern areas?

42 A. He doesn't show his opinion one way or another.
15 B. He is in favour of increased development.
25 *C. He is NOT in favour of increased development.
6 D. He thinks development of the north is impossible.
7 E. I don't know.

S36. According to this passage, Siberian herdsmen can determine the characteristics of a snow cover by ...

4 A. using new scientific equipment.
14 B. determining the amount of internal ice crystallization.
11 C. examining the degree of compactness.
63 *D. looking at the surface.
3 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 37 TO 40 USING INFORMATION FROM THIS PASSAGE.

SATURDAY CLIMBING

Sixty feet up the cliff, the toe of his climbing boot resting on a ledge no wider than a dime, two fingers curled around a nubbin of rock, Barry was suddenly afraid. "Rope," he called.

At the foot of the cliff, his daughter let out the golden line of rope. As Barry felt the rope go slack, he raised his right knee and pressed his toe into a shallow depression. Grunting with the strain, he stood up on his right leg, then paused, uncertain of his next move.

The cliff had proven deceptive. Close to the base, there were large handholds, so that at first the climbing was like walking up stairs. Then, unexpectedly, the surfaces smoothed; the places where he could get a secure hold were spread farther and farther apart. The numerous cracks dwindled until there was no place to set any protection. Unable to go back because of his pride, he had continued on until he now found himself dangerously far above his last piton. If he fell, he would drop 25 feet to the piton, then 25 feet past it before his rope came taut and held him. There was, because of the elasticity of the rope, a chance that he would ground out.

The thought flitted through his mind that it would be like falling from the top of a six-storey building. Tensing his fingers, he straightened his elbow and leaned back from the rock to search for his next hold. Above him, there was a half-inch ledge. He reached up, got a good grip, then lifted his left leg higher than he ever imagined he could and set his foot on a rough patch that would provide necessary friction to hold his weight.

He had been scared many times but never like this. Never before had he been this close to paralysis, to a sensation of letting go so that the tension and the fear would be over. The way he felt, he imagined, was the way a wounded animal felt when it finally gave up fleeing and allowed itself to be killed.

Six inches from his left hand there was a vertical crack. Cautiously, he explored it with his index finger. Just within his reach it widened slightly. He ran his hand over his rack and unsnapped the smallest chock nut. He forced the aluminum wedge deep into the crack. From the wedge there hung a wire loop and from that a carabiner. Catching hold of the rope tied to his harness, he lifted it up, forced open the spring-loaded gate of the carabiner and fitted the rope into the aluminum oval.

Once the gate snapped shut, he sighed with relief. The chock nut, the wire loop, the carabiner, the rope, fragile as they looked, would hold 10 times his weight. If he wanted to, he could let go and simply hang in space.

"You all right?" his daughter called. "Yeah," he lied. "Just resting."

His voice sounded faint and breathy. He was glad she could not see his momentary weakness. He could not control the trembling of his legs. The muscle of his right arm jerked spasmodically. Ever since his wife had left them, he had tried to compensate by providing unhesitating leadership for his daughter. He did his best to keep life simple and uncomplicated. It was, he thought, the way to provide security.

He glanced down. Among the scattered gray boulders, Moira's red hair gleamed like a burnished cap.

"You're doing fine," she hollered. The cross-currents of air that played over the cliff face blurred her voice, making it seem farther away than it really was. To hear what she said, he had to strain toward the sound. "You've got another 20 feet to a big ledge. You can do it easy."

He was grateful for her confidence.

-- W.D. Valgardson

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S37. What does the author want to emphasize by saying that to fall from the cliff would be like falling from a six-storey building?

16 A. how suicidal he felt
6 B. how many ledges there were
65 *C. how high the cliff was
4 D. how narrow the cliff was
2 E. I don't know.

S38. Why was Barry relieved that his daughter could not see him trembling?

2 A. because she will tell her mother
5 B. because she already thinks of him as a coward
23 C. because he does not want to scare her
59 *D. because he does not want to appear scared to her
2 E. I don't know.

S39. Why does Barry want to complete the climb?

4 A. because he's too scared to climb down
70 *B. because his pride won't let him go back
14 C. because his companion depends on him
3 D. because it is too easy
2 E. I don't know.

S40. Which one of the following statements best describes how Barry feels as he climbs the cliff?

45 *A. He is so afraid that it would almost be a relief to fall and not have to try anymore.
17 B. He is more concerned about Moira's safety than about his own safety.
12 C. He is bitter and angry because he was fooled into thinking the climb would be easy.
12 D. He is excited and pleased to have the chance to test himself against the dangers of nature.
6 E. I don't know.

FORM 10T

ACHIEVEMENT SURVEY

FOR QUESTIONS 1 TO 5, CAREFULLY READ EACH SENTENCE. THEN, SELECT THE ANSWER WHICH BEST MATCHES THE MEANING OF THE UNDERLINED WORD.

T1. He was booked on six counts of murder.

Here count means ...

34 A. the total number.
0 B. a nobleman of European origin.
64 *C. a charge, an allegation.
1 D. the score.
1 E. I don't know.

T2. The dissolution of parliament happened on May 15, 1963.

Here dissolution means ...

19 A. termination by dispersion.
6 B. decomposition.
51 *C. formal dismissal of an assembly.
2 D. death.
21 E. I don't know.

T3. We shuffled slowly into the yamen. The officials led the way. The architecture was interesting, not at all fitting for a bureaucratic establishment, yet the East has always had a flair for the unusual.

A yamen most likely is a ...

7 A. a small room.
13 B. an office building.
49 *C. a Chinese government building.
19 D. a Japanese temple.
11 E. I don't know.

T4. It was a beautiful potiche. The colours were simply outstanding. We had rarely had anything near it, and never anything in it. The artist had to be extremely skilled.

A potiche is most likely a ...

23 A. a painting.
6 B. sculpture.
62 *C. vase.
2 D. carving.
6 E. I don't know.

T5. We were surprised to see them. We did not know they were in France; our meeting was fortuitous.

The word fortuitous most likely means ...

3 A. well-planned.
1 B. in far places.
1 C. in a group of four.
92 *D. accidental.
2 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 6 TO 11 USING INFORMATION FROM THIS PASSAGE.

WILD HORSES

The fickle eye of public interest has, in recent years, focused briefly on the Cariboo wild horses. Wild horses have attracted the attention of ranchers for generations, but the interest of the general public in such matters is always briefer — although it may be, for a short time, far more intense.

The majority view of the ranchers seems clear. They want wild horses tamed, trapped and sold, or shot, according to merit. They say that they are runts which kidnap mares from domestic herds and take them away into the mountains. They say that wild horses breed down the domestic stock. They say that the life of a wild horse is nasty, brutish, and short -- and the shorter the better.

Those who love the wild horse bands say there is something splendid about anything wild and free. Should we wipe out the last of the wild horse bands, they say, we will regret it, even as we would regret the extinction of moose, deer, or any other wild creature.

Having had the good fortune to watch a wild band stampeding across a lonely mountain meadow with their broomtails streaming in the wind of their passage, I have been able to develop a sympathy for both points of view.

Wild horse herds develop during cycles of moderate weather. Those who are opposed to the protecting of wild horses say that it is an exercise in cruelty; that in the B.C. mountains all such bands face a cruelly slow death by starvation when one of our severe winters locks up their feed areas in the remote mountain valleys.

Over the years, the wild horse herds have been thinned by men as well as by winters. Some herds were driven into crudely-built corrals with long wings; once trapped there, animals of good conformation might have been chosen for domestication. Others were sold to be butchered for fox feed. In other circumstances, cowboys were sent out to shoot wild horses; bounties were sometimes paid.

As the fences advance and our wilderness shrinks, we may encounter a day when they will no longer exist. Whether this will be a better and kinder thing is still open to debate.

From The Chilcotin Holiday by Paul St. Pierre, used by permission of The Canadian Publishers, McClelland and Stewart Limited, Toronto.

T6. What is the main purpose of this passage?
7 A. to persuade people that the author's view is correct
70 *B. to present two sides of an issue
19 C. to present factual information
2 D. to describe different kinds of horses in B.C.
2 E. I don't know.

T7. According to the author, most ranchers ...
73 *A. want wild horses eliminated.
5 B. have no interest in wild horse bands.
14 C. hunt and kill wild horses.
6 D. believe that wild horses should run free.
2 E. I don't know.

T8. Why do some people believe that it is cruel to allow wild horse bands to develop?

20 A. Wild horses breed down domestic stock.
9 B. Wild horses are often hunted and shot.
7 C. Wild horses may be trapped and butchered for fox feed.
60 *D. Wild horses will eventually starve.
3 E. I don't know.

T9. Why does the author use terms like runts, nasty and brutish in presenting the ranchers' views?

11 A. to emphasize the cruelty of the ranchers
6 B. to emphasize the ugliness of the horses
13 C. to contrast wild and domestic horses
68 *D. to emphasize the ranchers' opinions about wild horses
2 E. I don't know.

T10. Which characteristic of the horses is emphasized by those who want them protected?

81 *A. their freedom
5 B. their conformation
4 C. their breeding
7 D. their potential value as tame horses
3 E. I don't know.

T11. What is the author's conclusion about wild horse bands?

4 A. They should be trapped and tamed.
2 B. They should be eliminated.
19 C. They should be protected.
72 *D. The issue of their value has not yet been settled.
2 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 12 TO 17 USING INFORMATION FROM THIS PASSAGE.

HURRICANES

The exact origins of hurricanes are still unclear, but scientists tell us they are born only in tropical regions and develop only over water warmer than 27 degrees Celsius. Any wind of force twelve (the highest possible range on the Beaufort Scale) with a velocity over 117 km/h qualifies as a hurricane. But over time the word has come to mean a cyclone that occurs in the West Indies and the Gulf of Mexico, while the equivalent in the Pacific is known as a "typhoon" - appropriately enough, "great wind" in Chinese. The hurricane season runs from May to December, with the most frequent occurrences in September and October.

In its early stages a hurricane moves in a generally westerly direction in the trade-wind belts, gradually curving to the right as it enters temperate latitudes. Its diameter ranges from 40 to 965 km; when well developed it is accompanied by very heavy rainfall, astonishingly low barometric pressure (often less than 96 kPa at the centre), and winds that can range from 121 to 322 km/h.

Fully developed, the hurricane is the most destructive of all storms, because of its size and savage intensity. Tornadoes - as Canadians on the Prairies know only too well - can generate a terrifying wind force. (In 1953 a freak tornado in Sarnia left bicycles from the street hanging from the outside of a building five storeys up.) But, as a Manitoban in Allan Anderson's book Remembering the Farm reveals, the tornado's funnel can be so narrow that it can pick up a combine on one side of a yard and crush it to scrap, while leaving bales of hay a few metres away completely untouched. In almost every case, a tornado's path is less than a half a kilometre in width. By contrast, the winds of a hurricane frequently blanket thousands of square kilometres. Measuring the actual velocity of hurricane-force winds

GO TO THE NEXT PAGE.

is always a problem; it is difficult to manufacture any instrument sensitive enough to survive - let alone record accurately - winds of hurricane force.

Strangely, the centre, or "eye", of the hurricane (which can extend as much as 22 km across) often produces a sudden, eerie calm, preceded and followed by great and violent winds as the eye passes on. At that point the winds will reverse themselves completely; an area battered from the south will find itself attacked from the north as soon as the eye moves on. Stories are told of ships near land being deluged by flocks of birds, butterflies, and insects; caught helplessly in the swirl of the storm, they eventually find themselves blown to the centre and land on the boat as a temporary haven.

From Hurricane Hazel by Betty Kennedy, published by Macmillan of Canada. Reprinted by permission of the author.

T12. Why is the hurricane the most destructive of all storms?

86 *A. because of its size and intensity
8 B. because it moves so quickly
4 C. because it blankets thousands of hectares
1 D. because the rain causes flooding
1 E. I don't know.

T13. Why does the author describe tornadoes?

23 A. to point out that tornadoes are also terrifying storms
69 *B. to further explain hurricanes by comparing them to tornadoes
4 C. to make the article more interesting
2 D. to promote Allan Anderson's book
2 E. I don't know.

T14. According to this article, in what major way does a hurricane differ from a tornado?

15 A. wind velocity
70 *B. the width of its path
7 C. the way it starts
4 D. duration
4 E. I don't know.

T15. "Typhoon", "cyclone", and "great wind" are ...

80 *A. other words that have come to mean the same as hurricane.
5 B. all more violent storms than hurricanes.
9 C. words used to describe a hurricane during certain parts of the year.
3 D. storms described in Allan Anderson's book Remembering the Farm.
3 E. I don't know.

T16. If you were caught in a hurricane and suddenly it became very calm, what could you conclude?

8 A. The storm was over.
82 *B. You were in the eye of the hurricane.
2 C. The barometric pressure was rising.
4 D. The storm had entered a temperate latitude.
3 E. I don't know.

T17. What is the main purpose of this passage?

14 A. to compare and contrast hurricanes and tornadoes
70 *B. to define and discuss hurricanes
6 C. to explain the origin of the word hurricane
8 D. to tell about damage caused by hurricanes
2 E. I don't know.

USE THE INFORMATION IN THE CHART SHOWN BELOW TO ANSWER QUESTIONS 18 TO 21.

BIOMES FOUND ON LAND

A Biome is an area characterized by certain plants, animals and climate.

BIOME	CLIMATE		SOME COMMON PLANTS	SOME COMMON ANIMALS
	AVERAGE PRECIPITATION PER YEAR	TEMPERATURE RANGE		
TROPICAL RAIN FOREST	200 cm	Almost constant 25°C	Vines Palm trees Orchids Ferns	Tree frogs Birds Insects Monkeys
GRASSLAND	25 to 75 cm	0° to 25°C	Grasses	Antelope Gophers Rabbits Prairie dogs
DESERT	Less than 25 cm	10° to 38°C	Cacti Small bushes	Lizards Insects Mice
TEMPERATE FOREST	48 to 150 cm	-24° to 38°C	Trees: Hickory Maple Beech Oak	Deer Black bears Squirrels Insects
TAIGA	35 to 40 cm	-24° to 22°C	Evergreen trees: Spruces Conifers Firs	Moose Weasels Mink
TUNDRA	10 to 14 cm	-28° to 15°C	Lichens Mosses Grasses Small bushes	Caribou Musk Oxen Polar bears

T18. Which one of the following statements describes the temperate forest biome?

48 *A. It can get extremely hot.
8 B. It can be extremely dry.
17 C. Temperature stays constant.
16 D. Rainfall stays constant.
11 E. I don't know.

T19. In which biome is the amount of precipitation most similar to that of a desert?

13 A. grassland
5 B. taiga
76 *C. tundra
4 D. temperate forest
2 E. I don't know.

T20. In which biome would you find fir trees?

2 A. tundra
2 B. grasslands
3 C. tropical rain forest
90 *D. taiga
1 E. I don't know.

T21. Which biome has the most rainfall in a year?

1 A. taiga
2 B. grassland
8 C. temperate forest
88 *D. tropical rain forest
1 E. I don't know.

READ THE POEM BELOW. THEN ANSWER QUESTIONS 22 TO 26.

FOUL SHOT

With two 60s stuck on the scoreboard
And two seconds hanging on the clock,
The solemn boy in the centre of eyes,
Squeezed by silence,
Seeks out the line with his feet,
Soothes his hands along his uniform,
Gently drums the ball against the floor,
Then measures the waiting net,
Raises the ball on his right hand,
Balances it with his left,
Calms it with his fingertips,
Breathes,
Crouches,
Waits,
And then through a stretching of stillness,
Nudges it upward.

The ball
Slides up and out,
Lands,
Leans,
Wobbles,
Wavers,
Hesitates,
Exasperates,
Plays it coy
Until every face begs with unsounding screams -

And then
And then
And then,
Right before ROAR-UP,
Dives down and through.

-- Edwin A. Hoey

Reprinted by permission of Xerox Education Publications.

T22. The poet repeats the phrase And then in three separate lines to emphasize ...

2 A. how quickly the game is decided.
89 *B. the feeling of tension and suspense.
2 C. the game's importance.
5 D. the excitement of the crowd.
1 E. I don't know.

T23. In this poem, the ball is described ...

4 A. as a symbol of happiness.
21 B. as if it were a drum.
6 C. by comparing it to a series of other objects.
64 *D. as if it were able to control its own movements.
4 E. I don't know.

T24. How does the basketball game end?

2 A. One of the players misses a foul shot and his team loses the game.
86 *B. One of the players sinks a foul shot to break a tie.
3 C. One of the players misses a foul shot and the game ends in a tie.
4 D. One of the players reaches up and blocks a shot with two seconds left.
4 E. I don't know.

T25. What does the poet mean when he states that the ball "plays it coy"?

5 A. The ball is rebounding from the backboard.
82 *B. The ball is rimming the basket looking as if it might fall in.
4 C. The ball is bouncing from one player to another.
2 D. The ball is almost out-of-bounds.
6 E. I don't know.

T26. Which one of the following statements is best supported by the details in the poem?

6 A. The boy shooting is not a very experienced player.
3 B. The crowd is hoping that the boy misses.
79 *C. This is an important game.
8 D. The game is in overtime.
3 E. I don't know.

IN THIS SECTION YOU WILL BE ASKED SOME QUESTIONS ABOUT A TABLE OF CONTENTS. DO NOT TRY TO READ THE ENTIRE TABLE. INSTEAD, READ EACH QUESTION AND THEN FIND THE ANSWER BY LOOKING THROUGH THE TABLE OF CONTENTS. ANSWER QUESTIONS 27 TO 30.

OUR CHANGING EARTH

CHAPTER ONE - GEOLOGICAL TIME 1
  1.1 The Passage of Time 2
    Estimating Ages 4
    Absolute and Relative Time 7
  1.2 Finding the Relative Ages of Rocks 8
    Finding Relative Ages the Hard Way 9
    Fossils as Clues 11
    Who Found Out? William Smith 15
  1.3 Finding Absolute Ages of Rock Structures 19
    Radiometric Dating 21
    Dating Sedimentary and Metamorphic Rocks 24
  1.4 How Long is a Year? 26
  1.5 Summary and Review 29

CHAPTER TWO - EARTHQUAKES 32
  2.1 On Shaky Ground 33
  2.2 Why Do Earthquakes Occur? 35
    Who Found Out?
      J.Tuzo Wilson - Pioneer of Plate Tectonics . . 36
  2.3 Measuring Earthquakes 38
    The Mercalli Scale 39
    The Seismograph 41
    The Richter Scale 42
  2.4 Earthquake Waves 44
  2.5 The Importance of Locating Earthquakes 47
  2.6 The Aftermath: Effects of an Earthquake 52
  2.7 Learning About the Earth from Earthquakes 56
    Layers of the Earth 57
  2.8 Looking to the Future 60
    Prediction 62
  2.9 Summary and Review 65

CHAPTER THREE - PROSPECTING AND EXPLORATION 68
  3.1 Searching for Ore Deposits 70
    Ore Minerals 71
  3.2 Gold! 73
  3.3 Ore Body Information 75
  3.4 Modern Exploration Methods 78
    Geochemical Surveys 80
    Magnetometer Surveys 82
    Gravity Meter Surveys 83
    Low-Density Deposits 85
    Electrical Surveys 86
    Drilling 88
  3.5 Summary and Review 90

T27. From what kind of text has this table of contents most likely been taken?

61 *A. science
29 B. social studies
4 C. earthquakes
4 D. prospecting
1 E. I don't know.

T28. If you were preparing for a final exam in a course which covered this entire textbook, which sections would you probably find most helpful?

7 A. 1.1, 2.1 and 3.1
9 B. 1.1, 2.3 and 3.4
5 C. 1.2, 1.3 and 2.7
68 *D. 1.5, 2.9 and 3.5
8 E. I don't know.

T29. Which section would be most useful if you were writing a report on gold panning?

2 A. 1.2
2 B. 2.7
84 *C. 3.2
9 D. 3.4
1 E. I don't know.

T30. Which section would be best to read for an overview of earthquakes?

23 A. 2.2
10 B. 2.7
5 C. 2.8
57 *D. 2.9
2 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 31 TO 35 USING INFORMATION FROM THIS PASSAGE.

Stories about the good old-fashioned winters when snow mounted to the eaves of houses and horse-hauled sleighs were galloped over drifts at tree-top level are not just old wives' tales. A hundred years ago such happenings were commonplace. However, during the past century our climate has experienced a warming trend, an upswing (from our point of view), in the erratic cyclic variations of the weather. It has probably been a short-term swing and the downswing may soon be upon us. And where will we be then, poor things, in our delicately structured artificial world? Will we still admire snow? More likely we will curse the very word.

From The Snow Walker by Farley Mowat, used by permission of The Canadian Publishers, McClelland and Stewart Limited, Toronto.

T31. Why does the author refer to our modern world as "delicately structured"?

9 A. to explain why we welcome warming trends in our climate
16 B. to point out increasing control over nature
50 *C. to emphasize our weakness compared to natural elements
18 D. to emphasize the role of structure and organization in our lives
7 E. I don't know.

T32. Why does the author refer to us as "poor things"?
61 *A. to emphasize our helplessness
18 B. to show how the world will change
8 C. because weather is erratic
7 D. because we are facing a new ice age
3 E. I don't know.

T33. How has our climate changed in the last 100 years?

3 A. It hasn't changed.
12 B. It has become more erratic.
5 C. It has become colder.
74 *D. It has become warmer.
2 E. I don't know.

T34. According to the author, people prefer ...

4 A. a drier climate.
10 B. changes in climate.
9 C. a colder climate.
70 *D. a warmer climate.
3 E. I don't know.

T35. Which of the following best states the author's belief about modern technology?

42 *A. He believes it has made us helpless.
14 B. He believes it will enable us to predict and control climate.
23 C. He believes it is entering an erratic cycle.
8 D. He believes it is the only hope for survival.
10 E. I don't know.

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 36 TO 40 USING INFORMATION FROM THIS PASSAGE.

SOMEBODY'S SON

He sat, washed up on the side of the highway, a slim, sun-beaten driftwood of a youth. He was hunched on his strapped-together suitcase, chin on his hands, elbows on knees, staring down the road. Not a car was in sight. Except for him, the dead, still Alberta plains were empty.

Now he was eager to write that letter he had kept putting off. Somehow, writing it would be almost like having company.

He unstrapped his suitcase and fished out a small unopened package of stationery from the pocket on the underside of the lid. Sitting down in the gravel of the roadside, he closed the suitcase and used it as a desk.

Dear Mom,

If Dad will permit, I would like to come home. I know there's little chance he will. I'm not going to kid myself. I remember he said once if I ever ran off I might as well keep on going.

All I can say is that I felt leaving home was something I had to do. Before even considering college, I wanted to find out more about life and about me and the best way for us (life and me) to live with each other. Please tell Dad - and I guess this'll make him sore all over again - I'm still not certain that college is the answer for me. I think I'd like to work for a time and think it over.

You won't be able to reach me by mail, because I'm not sure where I'll be next. But in a few days I hope to be passing by our place. If there's any chance Dad will have me back, please ask him to tie a white cloth to the apple tree in the south pasture - you know the one, the Grimes Golden beside the tracks. I'll be going by on the train. If there's no cloth on the tree I'll just quietly, and without any hard feelings toward Dad - and I mean that - keep on going.

Love,
David

T36. What kind of person does David think his father is?

9 A. fair and understanding
6 B. weak and uncertain
3 C. easygoing and carefree
76 *D. stubborn and unbending
2 E. I don't know.

T37. Why does the writer state that David is washed up on the side of the highway?

24 *A. because he arrived there by chance
3 B. because he is very clean
11 C. because he is lost
55 D. because he is unhappy
2 E. I don't know.

T38. Why did David feel good about writing the letter?

71 *A. Writing the letter was like having company.
14 B. He knew his parents would be worrying about him.
5 C. He had promised his mother that he would write.
3 D. He had bought new stationery.
2 E. I don't know.

T39. In this story, how do you think the author intends you to feel towards David?

81 *A. sympathetic
4 B. envious
3 C. disgusted
4 D. resentful
3 E. I don't know.

T40. Under what circumstances could David return home?

11 A. if he decides what he wants to do with his life
3 B. if his mother sends him money for a train ticket
74 *C. if there was a white cloth on the Grimes Golden
4 D. if there is a yellow cloth on the apple tree by the tracks
2 E. I don't know.

FORM 10Q

ACHIEVEMENT SURVEY

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 1 TO 5 USING INFORMATION FROM THIS PASSAGE.

SOMEBODY'S SON

He sat, washed up on the side of the highway, a slim, sun-beaten driftwood of a youth. He was hunched on his strapped-together suitcase, chin on his hands, elbows on knees, staring down the road. Not a car was in sight. Except for him, the dead, still Alberta plains were empty.

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All I can say is that I felt leaving home was something I had to do. Before even considering college, I wanted to find out more about life and about me and the best way for us (life and me) to live with each other. Please tell Dad - and I guess this'll make him sore all over again - I'm still not certain that college is the answer for me. I think I'd like to work for a time and think it over.

You won't be able to reach me by mail, because I'm not sure where I'll be next. But in a few days I hope to be passing by our place. If there's any chance Dad will have me back, please ask him to tie a white cloth to the apple tree in the south pasture - you know the one, the Grimes Golden beside the tracks. I'll be going by on the train. If there's no cloth on the tree I'll just quietly, and without any hard feelings toward Dad - and I mean that - keep on going.

Love,
David

1. Why did David feel good about writing the letter?

☐ Writing the letter was like having company.
☐ He knew his parents would be worrying about him.
☐ He had promised his mother that he would write.
☐ He had bought new stationery.
☐ I don't know.

2. Think about the story again. What kind of person is David? Describe David in a few words on the line below.

____

3. What was it about the story that led you to describe David the way you did in question 2? Write your answer on the lines below.

____
____
____
____
____
____
____
____

4. How do you think the author intends you to feel about David?

____

5. Did you like this story? Explain why or why not on the lines below.

____

____

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READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 6 AND 7 USING INFORMATION FROM THIS PASSAGE.

MEASURING EARTHQUAKES

The Chinese, back in 132 A.D., were the first to invent an instrument that could detect earth tremors. It consisted of several dragon's head figures encircling a cylinder. Each dragon held a ball in its mouth. When the delicate balance of the device was disturbed, the balls would fall. The instrument was sensitive enough to detect earthquakes too distant to be felt otherwise.

Later, other attempts were made to create instruments that would respond to earthquake vibrations. None, however, could actually measure the intensity, or magnitude, of an earthquake.

The magnitude is affected by several factors. The greater the amount of energy released by the earthquake, the greater will be its intensity. Even the nature of the rock materials beneath an area will affect the magnitude of an earthquake. The actual measuring of an earthquake's intensity will vary according to the distance of the recorder from the quake's centre.

The Mercalli Scale. One scale that assesses the intensity of an earthquake based on the damage caused was proposed in 1902 by Giuseppi Mercalli (1850-1914), an Italian scientist. The main problem with the Mercalli scale is that it depends on human judgement. Thus, an earthquake rated "VII" by one observer might be rated only "V" by another. A more accurate measuring device was required.

The Seismograph. While the Mercalli scale measures the effects of earthquake waves, the seismograph measures the actual amount of ground motion. Within every seismograph is a large, suspended mass that is free to move independently of its supports. The rest of the instrument is anchored to

GO TO THE NEXT PAGE.

a strong foundation in the ground. When an earth tremor causes the ground to shake, the inertia of the large mass within the seismograph gives it a tendency to stand still. The machine can thus measure the difference in movement between the ground and the mass. It then magnifies this difference up to 100,000 times, indicating the ground motion by the vibrations of a pen on a moving roll of paper tape. The resulting pattern is called a seismogram.

The Richter Scale. You will remember that the Mercalli scale of earthquake intensity is based on human observations. It is, therefore, subject to the errors of human judgement. The Richter scale, on the other hand, is based on the actual amount of ground motion as measured by a seismograph. Charles F. Richter (b. 1900) developed his scale in California in 1935. It is now the most well-known and widely used scale around the world for measuring earthquake magnitude.

Each point on the Richter scale represents ground vibrations ten times greater than the point before, and about 40 times the amount of energy released. Unlike the Mercalli scale, which has an upper limit of XII, the Richter scale is open-ended. This means that there is no maximum rating, although an earthquake with a magnitude of 10 or greater is unlikely. So far, the highest magnitude recorded has been 9.5 on the Richter scale in Chile, during a devastating quake in 1960.

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6. What is the main purpose of this article?

☐ to point out the weaknesses of the Mercalli scale
☐ to explain how a seismograph works
☐ to explain the measurement of earthquakes
☐ to emphasize the magnitude of earthquakes
☐ I don't know.

7. The outline of a chart to compare the Mercalli and Richter scales is given below. Complete the chart using information from the passage.

	MERCALLI SCALE	RICHTER SCALE
PURPOSE		
DEVELOPED BY		
WHAT IT MEASURES		
UPPER LIMIT		
ACCURACY		

READ THE POEM BELOW. THEN ANSWER QUESTIONS 8 TO 10.

FLIGHT OF THE ROLLER COASTER

Once more around should do it, the man confided...

And sure enough, when the roller coaster reached the peak
Of the giant curve above me - screech of its wheels
Almost drowned by the shriller cries of the riders -

Instead of the dip and plunge with its landslide of screams
It rose in the air like a movieland magic carpet, some
    wonderful bird,

And without fuss or fanfare swooped slowly across the
    amusement park,
Over Spook's Castle, ice-cream booths, shooting-gallery;
    and losing no height

Made the last yards above the beach, where the cucumber-cool
Brakeman in the last seat saluted
A lady about to change from her bathing suit.

Then, as many witnesses duly reported, headed leisurely
    over the water,
Disappearing mysteriously all too soon behind a low-lying
    flight of clouds.

"Flight of the Roller Coaster" is reprinted from Collected Poems of Raymond Souster by permission of Oberon Press.

8. In this poem, the poet is trying to ...

☐ teach you a lesson.
☐ explain why a mysterious event occurred.
☐ share a fantasy.
☐ describe a real event.
☐ I don't know.

9. What is the narrator's reaction to the flight of the roller coaster?

____
____
____

10. Did you like reading this poem? What was it about the poem that led you to like or dislike it? Write your answer on the lines provided below.

____
____
____
____
____
____
____
____
____
____
____

READ THE PASSAGE BELOW. THEN ANSWER QUESTIONS 11 TO 13 USING INFORMATION FROM THIS PASSAGE.

WILD HORSES

The fickle eye of public interest has, in recent years, focused briefly on the Cariboo wild horses. Wild horses have attracted the attention of ranchers for generations, but the interest of the general public in such matters is always briefer -- although it may be, for a short time, far more intense.

The majority view of the ranchers seems clear. They want wild horses tamed, trapped and sold, or shot, according to merit. They say that they are runts which kidnap mares from domestic herds and take them away into the mountains. They say that wild horses breed down the domestic stock. They say that the life of a wild horse is nasty, brutish, and short — and the shorter the better.

Those who love the wild horse bands say there is something splendid about anything wild and free. Should we wipe out the last of the wild horse bands, they say, we will regret it, even as we would regret the extinction of moose, deer, or any other wild creature.

Having had the good fortune to watch a wild band stampeding across a lonely mountain meadow with their broomtails streaming in the wind of their passage, I have been able to develop a sympathy for both points of view.

Wild horse herds develop during cycles of moderate weather. Those who are opposed to the protecting of wild horses say that it is an exercise in cruelty; that in the B.C. mountains all such bands face a cruelly slow death by starvation when one of our severe winters locks up their feed areas in the remote mountain valleys.

Over the years, the wild horse herds have been thinned by men as well as by winters. Some herds were driven into crudely-built corrals with long wings; once trapped there, animals of good conformation might have been chosen for domestication. Others were sold to be butchered for fox feed. In other circumstances, cowboys were sent out to shoot wild horses; bounties were sometimes paid.

As the fences advance and our wilderness shrinks, we may encounter a day when they will no longer exist. Whether this will be a better and kinder thing is still open to debate.

From The Chilcotin Holiday by Paul St. Pierre, used by permission of The Canadian Publishers, McClelland and Stewart Limited, Toronto.

11. In the space provided below, list all the reasons for and against preserving wild horse herds that you can find in this article.

REASONS FOR PRESERVING	REASONS FOR ELIMINATING

12. The author of this passage expresses sympathy with both sides of the argument about wild horses. Do you feel he is more sympathetic to one side?

☐ No, he is equally sympathetic to both.

☐ Yes, he is more sympathetic to arguments for saving the horses.

☐ Yes, he is more sympathetic to arguments for eliminating the horses.

13. Explain why you chose the answer you gave in Question 12.

APPENDIX H

Observations and Suggestions from Participants in the 1984 Reading Assessment

OBSERVATIONS AND SUGGESTIONS FROM ASSESSMENT PARTICIPANTS

Over 200 classroom teachers participated in various phases of this assessment. In the course of their activities as advisors, reviewers, interpretation panelists and markers, they have offered a number of insights and suggestions regarding effective reading instruction. These suggestions are presented here under three headings: curriculum and materials; professional development; and classroom instruction. It is important to keep in mind that these suggestions are not formal recommendations: they do not derive directly from the data described in this report. Generally, they are tangential to the results, and evolved as participants discussed broad issues such as: "What characterizes good reading programs?" "How should reading instruction in secondary schools best be organized?" "Why are so many boys 'turned off' reading?" Typically, the suggestions presented below derive from the experiences and observations of the participants.

Curriculum and Materials

Elementary

1. Diversity in the purchase of support materials such as trade books, authorized novels, and recently published supplemental readers should be encouraged.

2. Materials should be selected so as to ensure that opportunities for inferential and critical comprehension are provided.

Secondary

1. Basal reading series are inappropriate for secondary grades, and should not be used in regular English courses.

2. All subject area teachers should be encouraged to use supplemental reading materials, including periodicals and files of current newspaper clippings.

3. Local resource materials, tied to the B.C. curricula should be developed outlining strategies for language across the curriculum.

Professional Development

Elementary

1. Interested teachers might consider working through their districts to develop on-site Summer Institutes focusing on languages arts.

Professional Development (cont'd)

Elementary

2. Efforts should be made to ensure that teachers have the resources and opportunity to maintain and update their knowledge about reading comprehension and its instruction.

Secondary

1. Professional development is essential for many English teachers who are trained and experienced in teaching appreciation for reading, but not in teaching reading skills.
2. Reading courses should be offered to teachers, not to students. Students should receive appropriate subject-specific reading instruction in every secondary course they take.

Classroom Instruction

Elementary

1. Teachers should strive for integration across the language arts.
2. Teachers should continue to focus on the development of higher level comprehension skills beginning--and continuing--with a strong oral component.
3. Teachers should encourage student appreciation of poetry through shared oral reading and discussion.
4. Language arts teachers should emphasize comprehension, appreciation, and verbal communication skills. Artistic projects (illustrations, posters, title pages) should be recognized as valuable extensions of language arts development, rather than as required student outcomes. Such projects should not have an unwarranted influence on evaluation of student reading performance. Teachers should be aware that for many students--particularly boys in intermediate grades--such projects are major sources of frustration and aversion.

Secondary

1. Innovations/improvements in secondary reading are most successful when they are developed and implemented at the school-level.
2. Many schools report outstanding successes with sustained silent reading programs. Schools which have not previously had such a program should consider implementation.

Classroom Instruction (cont'd)

Secondary

3. Recommendations of previous reading assessments regarding the role of content area teachers in developing reading skills should be followed.

4. All teachers should take responsibility for the development of relevant subject-specific vocabulary.

5. Teachers in all subject areas should develop strategies for the development of information retrieval skills.

6. Study skills should be systematically presented, and include strategies for taking examinations and reading test questions.

7. In many classrooms poetry needs more attention with a strong focus on understanding, appreciation, and enjoyment. Teachers should read poetry to students more often.

8. Language arts teachers should continue to emphasize comprehension, appreciation, and verbal communications skills (see Suggestion 4, Elementary above). Students who are inclined to provide visual representation should be encouraged; students who find such activities frustrating should be directed to other forms of communication.

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